NOVEMBER-DECEMBER 1948

THE BULLETIN OF THE

AMERICAN SOCIETY OF HOSPITAL PHARMACISTS

VOLUME 5

NUMBER 6

AS *The President* SEES IT

Plans are progressing nicely for the next Institute on Hospital Pharmacy. According to present tentative arrangements, this institute will be held in California, in the San Francisco Bay area, during the latter part of June 1949. Your president has been named chairman of the Program Committee and the other members of the committee have been appointed. To activate the committee, I have prepared the first draft of the institute program and this has been sent to the other committee members for their critical evaluation. Also, Dr. Fischelis and I met with representatives of the American Hospital Association in Chicago on December 11. The program was discussed and many worthwhile suggestions were the end result of this meeting.

A second institute for 1949 has reached the embryonic stage of planning. If these plans mature, the institute will be held in the Middle West during late Summer or early Fall.

During recent months, I have received a considerable volume of correspondence from A.S.H.P. members relative to the site of future institutes. Nearly every correspondent would like to have a 1949 institute held in his own locality. Of course, it will not be possible to satisfy everyone. There are many factors to be considered in the selection of an appropriate location for an institute. Among these are convenience of transportation facilities, hotel accomodations, meeting room facilities, general living costs in the area under consideration, population density, and finally, has the area under consideration been the site of a previous institute? As it is not possible to draw up a completely new program for each institute, it means that a number of subjects will be repeated from year to year. Programs are planned with a view toward attracting new people who have not attended earlier institutes. While it is true that those who attend their second and third institute will benefit professionally to a great degree, they cannot expect to carry home the same wealth of information that will be accumulated by the person attending his first.

Duquesne University School of Pharmacy sponsored a most impressive ceremony on November 1. The occasion was the dedication of a professional pharmacy within the walls of the school. This pharmacy carries the name of the late George A. Kelly, Sr., a prominent Pittsburgh pharmacist. It will not stand as a museum to collect dust but will serve as an active teaching tool for students in the school. All equipment is of most modern design and includes special apparatus for the preparation of ophthalmic solutions and the microfilming of prescriptions. I was honored with a place on the program during the dedication exercises which afforded me an excellent opportunity for missionary work for hospital pharmacy in general, and particularly for the A.S.H.P. and the Division of Hospital Pharmacy of the A. Ph. A.

Cordially,

W. Arthur Purdum

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THE BULLETIN is published bimonthly by the American Society of Hospital Pharmacists, a national organization devoted to the profession of hospital pharmacy, dedicated to the interests of the hospital pharmacist, and pledged to cooperate with the American Pharmaceutical Association with which it is affiliated.

Contributions of articles by hospital pharmacists, or by others interested in the progress of this important branch of the public health profession, will be accepted if they are of general interest to those in hospital pharmacy. The editors reserve the right to revise all material submitted, if necessary.

The American Society of Hospital Pharmacists and the American Pharmaceutical Association assume no responsibility for the statements and opinions advanced by contributors to THE BULLETIN. Views expressed in the editorials are those of the editor and do not necessarily represent the official position of the American Society of Hospital Pharmacists.

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Publication Office
and
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at
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CORRESPONDENCE

Dear Sirs: This is to thank you for your kindness in mailing to our student branch at Wayne University, copies of both THE BULLETIN and The Hospital Pharmacy. Our chapter of the A.-Ph. A. has been reorganized recently and sponsors monthly professional programs for the Pharmacy students at the college. At the last meeting in December, Mrs. Jane L. Rogan was our guest speaker, at which time she discussed the pre-requisites necessary for hospital pharmacy work. Many of the students had no previous conception of the diverse activities which a hospital pharmacist and his staff controls, and her presentation along with the literature which you sent to us has helped to establish a broader scope for the student concerning the opportunities which are offered a pharmacist.

We plan to continue our Job Forum discussions at future meetings, featuring speakers from retail and professional drug stores, manufacturing concerns, and detailing and research fields.

Permit me to thank you again for your cooperation.

A. E. Sroka, Secretary,
Wayne University Branch
A. Ph. A.

Dear Sirs: Thank you most sincerely for your letter containing the information that President Zugich has nominated me for membership in the American Society of Hospital Pharmacists.

I am enclosing an application blank along with a check to cover dues.

Wishing you succees in your efforts to secure new members.

Sister Beatrice

St. Leo's Hospital
Greensboro, North Carolina

Dear Sirs: Kindly send me the necessary information for obtaining a subscription to your publication, THE BULLETIN of the American Society of Hospital Pharmacists.

I am a recent graduate of the Brooklyn College of Pharmacy and am planning to enter hospital pharmacy in the near future.

I have read your publication while attending school and have found it to be very interesting besides providing me with a lot of useful information. Therefore, I would like to obtain the necessary information in order to be assured that I receive copies of THE BULLETIN.

Allan Magsitza

230 Madison Street
New York 2, New York

Dear Sirs: I am very much interested in the development of the American Society of Hospital Pharmacists and I think the organizational work that has been done has been an admirable job. The thought occurs to me that probably a little more interest in the Society could be obtained if the students in the colleges of pharmacy could become associate members at a nominal fee. This could probably be done by establishing junior branches in conjunction with the American Pharmaceutical Association and perhaps for an additional amount of a dollar or so, these junior members could also become members of the A. S.-H. P. and receive THE BULLETIN. If this could be worked out so that it would not be a financial drain on the Society, I am sure it would stimulate greater interest in pharmacy as a whole and hospital pharmacy in particular.

Earl P. Guth,

Department of Pharmacy
Ohio State University
Columbus, Ohio

Dear Sirs: I have been intending to join your Society for some time but unfortunately kept neglecting the matter. I have been extremely interested in the few copies of THE BULLETIN which I have seen at different times.

I am looking forward to having every copy of THE BULLETIN.

Irene O. Olynyk,

Women's College Hospital
Grenville St. and Surrey Place
Toronto

EDITORIAL

PHARMACY AND MEDICAL CARE PLANS

Several current trends aré bound to have a profound influence on the future practice of pharmacy. The astoundingly rapid growth of health insurance programs, the vast sums of money earmarked for hospital construction and expansion, the trend toward the establishment of private offices for physicians in new hospitals and clinics, the development of low cost diagnostic clinics, the provision for increased outpatient care in small community hospitals as well as in large hospitals - all of these factors point toward the inevitable increase in the distribution of drugs through hospitals. It is obvious that they also bring sharply into focus the great need for accelerated activity on the part of hospital pharmacy to prepare itself to assume its rightful responsibility in this program for medical care.

When President Truman's national health bill is debated in Congress, we in pharmacy should realize that essentially such a program is already under way and is meeting with tremendous success. It is true that the present health program does not have the compulsory provision. But health insurance programs now cover such a great segment of our population and, at the present rate of growth, the number covered by health insurance will soon be so large that some means will have to be found to provide protection for the remaining people, especially those in the very low income brackets and the indigent. It is possible that an alternative to compulsory health insurance, such as that promoted by the hospital associations in the Taft National Health bill, may be the answer. At any rate we know that some means will be found to expand the medical care program. Thus, we in pharmacy should understand that a new medical care program is rapidly being effected and we should not spend too much time in belaboring "Socialized Medicine" and at the same time ignoring the many organizational forms that social medicine is taking. State, or socialized medicine, will probably not be adopted. But social medicine, or the accomplishment of medical care for all by group action, is almost here.

We believe that the voluntary hospital will and should remain the central organization through which medical care is provided. The hospitals have developed the Blue Cross and other medical plans through which outstanding medical care is supplied on a prepayment basis to approximately 50,000,000 people. This is in addition to the service offered those not covered by hospital insurance.

Perhaps a few statements on the plans for prepayment medical care for those in such widely divergent fields as labor, agriculture, and industry may indicate the rapid expansion of prepayment plans for medical care.

The United Mine Workers is now studying plans for the establishment of a large medical center for injured miners. Money for the health center would come from their Welfare and Retirement Fund which now amounts to $100,000,000 annually. The Amalgamated Clothing Workers plans to establish a $1,000,000 Health Center with a $500,000 annual operating budget to provide medical services to its 60,000 members in metropolitan New York. This union, as well as the International Ladies Garment Workers, already has industry-wide health insurance plans. The Ford Motor Company and the U. A. W. - C. I. O. have chosen the Blue Cross plan for hospital-surgical protection for Ford employees and their families throughout the United States. Approximately 300,000 people will be eligible under this plan. The Manufacturers Association of Connecticut reports that 75 per cent of the state's factory workers are insured against costs of sickness incurred off the job. More than 7,000,000 people in rural areas (farms, and towns of less than 2500) are now covered by some form of accident, and health or hospitalization insurance. The Kaiser-Frazer Corporation and the U. A. W. - C. I. O. have signed an agreement which includes a fund for medical and hospital care.

The above statements mention only a very few of the vast number of labor-management plans. The recent ruling by the National Labor Relations that employers are compelled, by the labor code, to consider demands for such insurance plans in collective bargaining with unions, is bound to greatly increase the number of people under such plans in this highly industrialized economy.

The place of pharmacy in all medical care programs needs to be thoroughly studied and evaluated. The inevitable demands for additional well trained hospital pharmacists and an analysis of the problems and the needs of hospital pharmacy call for great activity from the Division of Hospital Pharmacy. There is an obvious need to expand hospital pharmacy internship training and graduate programs for those who are about to enter this field. New specialized training programs for those already in hospital pharmacy should be inaugurated, in addition to the institutes which should be continued.

DON E. FRANCKE, *Editor*

AUREOMYCIN

A NEW ANTIBIOTIC FOR ORAL USE WITH A WIDE RANGE OF ACTIVITY IS NOW COMMERCIALLY AVAILABLE.*

Aureomycin hydrochloride is an antibiotic derived from the mold, Streptomyces aureofaciens. This new drug possesses a wide range of activity against many Gram-positive and Gram-negative organisms, and is exceptionally unusual because its spectrum of activity includes Rickettsiae. The drug is also unusual because it exerts its therapeutic activity after oral administration. It has been released in dosage forms for oral and topical use. Aureomycin's discoverer is Dr. H.M. Duggar[1] of Lederle Laboratories. Lederle has released the drug under the name Duomycin. It is probable that the latter name may be discontinued in the near future.

PROPERTIES: Aureomycin is soluble, crystalline and golden yellow in color. It consists of highly refined material of such purity that dosage can be, and is, expressed in mg. of weight instead of units of potency. Aureomycin is soluble in acid and in alkaline solutions, but is almost insoluble at pH 7. Four per cent solutions may be easily prepared as the hydrochloride pH 2.5 or as a sodium salt in a carbonate buffer pH 8.5. At pH 2.5, the salt is stable, but at pH 8.5, at 25 degrees Centigrade, it loses 12 per cent of its activity in 30 minutes, 20 per cent in one hour and 40 per cent in two hours. The drug is also soluble in 5 per cent dextrose solution. Solutions in normal saline precipitate when a concentration greater than 1 per cent of the drug is attained. The aqueous solutions are acid and when neutralized or made alkaline, deterioration of activity is rapid at room temperature.

PHARMACOLOGY: Aureomycin is a well-tolerated drug with a very low order of toxicity. Its non-toxic properties have been summarized by Harned[2] and co-workers, who found that aureomycin has a low toxicity and almost no side reactions. They found that orally, mice tolerated 1500 mg. per kilogram and rats 3,000 mg. per kilogram. Dogs, cats, rabbits, guinea pigs and mice tolerated without symptoms intravenous doses of 50 mg. per kilogram, pH 8.5 given at a rate of 10 to 20 mg. per kilogram per minute. There was no evidence of methemoglobin formation. Multiple intravenous doses of 20 mg. per kilogram given to dogs two times per day for six days produced no unfavorable results except irritation of perivascular tissues at the site of injection. Subcutaneous and intramuscular injections were irritating, but 0.5 per cent solution in 0.9 per cent saline produced only mild irritation in the conjunctival sacs of rabbits. Mice, rats and dogs given 100 to 200 mg. per kilogram per day orally for 12 weeks showed no evidence of chronic toxicity. Aureomycin pH 8.5 given to dogs intravenously at a rate of 10 mg. per kilogram per minute produced essentially no changes in blood pressure or respiration. The drug is a mild diuretic, about one third as active as caffeine. It does not produce albuminuria. It is not an antipyretic in rabbits or rats. After oral doses, it appears in the urine in one hour and its excretion continues actively for 6 to 12 hours. Therapeutically effective concentrations exist in the cerebrospinal fluid of dogs within 6 hours after an intravenous dose.

Wright[3] and co-workers found that highest blood levels occurred 2 hours after oral administration of 300 mg. of aureomycin, namely, 2 micrograms per cc. Dowling[4] and co-workers found after the intramuscular injection of 100 mg. to adults that the peak concentration in the blood was reached at about the third hour, detectable concentrations being present at the twelfth hour. After 700 mg. given by mouth, the peak concentration in the serum occurred about the sixth hour, and all sera showed detectable amounts at the twelfth hour.

The pharmacology of aureomycin has been further reported by Schoenbach[5] and co-workers, who used the drug in humans. They found that when the drug was injected intramuscularly, acute pain lasting several minutes followed by a dull, drawing pain which persisted for approximately one and a half hours was noted. Upon repeated dosages, the local sites became erythematous and tender. When the drug was dissolved in 1 per cent procaine, 40 mg. could be injected in a volume of 2 cc. and the acute pain following the injection was then not observed, but the dull, drawing pain did appear. In light of these observations, they concluded that the treatment of patients by the intramuscular route did not appear feasible.

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* Aureomycin is marketed by Lederle Laboratories under the name, Duomycin.

On the other hand, they found that aureomycin was well tolerated when administered orally. A single dose of 0.5 gram of a crude preparation was associated with loss of appetite and nausea. With more purified drug in gelatin capsules, nausea and vomiting were noted only in one patient on repeated occasions. The nausea in this patient was maximal following the early morning doses and it was completely relieved when ½ ounce of an aluminum hydroxide preparation was given with each 100 mg. dose of the drug. Other patients and normal human subjects exhibited no nausea on oral dosage of aureomycin. The drug is excreted in the urine and high concentrations can be obtained. Vomiting which occasionally follows the oral use of aureomycin may be prevented or alleviated by the concurrent administration of aluminum hydroxide gel.

BACTERIOLOGICAL STUDIES: The studies of Price[6] and his co-workers indicate that the bacterial spectrum of aureomycin is somewhat similar to that of streptomycin, inasmuch as it has an inhibitive action against both Gram-positive and Gram-negative organisms. Its greatest activity appears to be against the Gram-positive spore-bearing organisms. According to these workers, it may be said that the activity of aureomycin is not as great as streptomycin, but its acute toxicity appears to be of approximately the same order of magnitude. Aureomycin in solution is an unstable antibiotic and loses potency rapidly in broth, water and serum. These workers also found that aureomycin is a relatively nontoxic drug which is well-tolerated by the animals used in their studies.

INDICATIONS

RICKETTSIAL INFECTIONS. Aureomycin is highly specific in the treatment of Rocky Mountain spotted fever, Q fever, endemic murine typhus, scrub typhus and Rickettsial pox.

SPOTTED FEVER. Two patients with Rocky Mountain spotted fever were treated by Dowling[4] and his co-workers. The first, an 11 year old boy, was given 300 mg. of aureomycin every six hours. The temperature began to subside within 24 hours and was within normal limits within 60 hours. The rash began to disappear with the drop in temperature and was entirely gone within 24 hours. Aureomycin therapy was continued for five days and recovery was uneventful. The second patient, a 42 year old man, who had been under treatment with sodium para-amino-benzoate for ten days without effect, was disoriented and had continuous fever of 104 degrees to 105 degrees Fahrenheit. Other medication was discontinued and aureomycin treatment started in doses of 700 mg. every six hours. Fever and toxicity began to subside within 12 hours. The temperature reached normal 48 hours after the start of therapy, and remained within normal limits thereafter. Aureomycin treatment was given for five days altogether and recovery was uneventful. In a recent talk before the American Pharmaceutical Manufacturers Association, Dr. Perrin Long of Johns Hopkins University medical school reported that aureomycin had cured thirteen patients with Rocky Mountain spotted fever in Maryland hospitals, enabling patients to leave their beds in eight days.

Q FEVER. The use of oral aureomycin in Q fever appears to offer considerable promise. Lennette[7] and co-workers administered the drug to ten patients by the oral route. These individuals received, during the first 24 hours, a dose of 3.2 or 4 grams of the drug, and they were maintained on 1.6 or 2 grams per day for four or more days. The smallest total dose of drug administered was 8 grams, the largest 27.5 grams. In every instance symptomatic improvement was manifested best by the return of appetite, which was noted within 48 hours, and a considerable decline of temperature occurred within 48 to 72 hours after therapy was commenced. The temperatures of eight patients fell to within normal limits during the first three days of therapy and the temperature of the other two became normal after four or five days of therapy. In eight of the ten patients mentioned, convalescence was uneventful. In the remaining two who had received only 10 grams of the drug over a four day period, fever recurred two days after the drug had been stopped. Therapy was then re-instituted and the temperature returned to normal in much the same pattern as had been observed during the first episode.

TYPHUS. Experimental studies in animals indicate that aureomycin should be effective against typhus. In typhus infected guinea pigs, Anigstein[8] and co-workers were able to obtain complete protection in the great majority of cases. Wong and Cox[9] have shown in the laboratory that aureomycin is specific for the entire group of typhus rickettsiae, including those causing Rocky Mountain spotted fever and murine typhus ("endemic typhus"). Several clinical cases, as yet unpublished, showed prompt and favorable response.

LYMPHOGRANULOMA VENEREUM. Aureomycin is said to be the treatment of choice in all cases of lymphogranuloma venereum. A total of 35 cases have been reported by Wright[3] and his co-workers. They found the results to be excellent and believe that this antibiotic is a superior,

specific form of therapy for lymphogranuloma venereum virus infection. They state also that the drug is very effective against the secondary bacterial invaders present in this disease. These same investigators also treated three cases of granuloma inguinale with aureomycin with eminently satisfactory results. The ulcerative lesions with proved granuloma inguinale were healed by the use of this drug. The oral dosage, used in one of these cases, was computed at 5 mg. per kilogram of body weight. This dose was given every four hours. No toxic reactions of any type were noted.

PSITTACOSIS. Early experimental evidence has shown that aureomycin is actively therapeutic against psittacosis infections and associated virus diseases. Dramatic responses have also been obtained in patients with atypical virus pneumonia.

BACTERIAL INFECTIONS

URINARY TRACT INFECTIONS: Eight patients with chronic urinary tract infections which had not responded to penicillin, streptomycin or sulfonamide therapy, were treated by Schoenbach[5] and others with aureomycin. These patients cleared promptly. The organisms identified with these cases were B. coli-aerogenes, B. paracolon and Streptococcus fecalis. The findings of Collins[10] and others indicate that in urinary tract infections, when the bacteriological findings and the type of cases chosen for treatment are taken into consideration, the results are favorable and may be comparable with, or possibly superior to those resulting from the use of streptomycin in similar cases. In these cases, aureomycin was given, usually for seven days, in doses of 0.5 gram morning and evening. Those who were retreated received 0.5 gram four times a day. Bryer[11] and co-workers found that infections of the urinary tract due to coli-aerogenes and S. fecalis were sterilized and evidence of inflammation disappeared when the patients were treated with aureomycin by mouth. Infections with Proteus vulgaris and Pseudomonas aeruginosa, however, were not benefitted by aureomycin. The results in the cases of gonorrhea were inferior to those obtained with adequate amounts of penicillin.

BRUCELLOSIS: Bryer[11] and others treated a patient ill with chronic brucellosis, whose blood cultures were repeatedly positive for Brucella. This patient became afebrile three days after the institution of aureomycin therapy. Blood cultures became sterile in 48 hours after treatment was begun. As of the date of reporting, these cultures have remained sterile and the patient had remained afebrile and asymptomatic for more than two months. Schoenbach has reported the use of aureomycin in three cases of acute brucellosis, two of which had bacteriological and clinical remission within 72 hours.

OTHER BACTERIAL INFECTIONS. When an infection is caused by one or more Gram-positive cocci that are resistant to penicillin, it is advisable to administer aureomycin. Preliminary reports indicate that aureomycin is useful in stubborn and resistant staphylococcic infections. Aureomycin is also useful in infections caused by the coli-aerogenes group, including those of the urinary tract, and peritonitis, with or without bacteremia.

The place of aureomycin in Salmonella infections, including typhoid fever, has not yet been evaluated. Preliminary data indicate that the drug may be effective in these conditions in large doses.

Aureomycin is not effective in infections caused by Proteus vulgaris or by Pseudomonas aeruginosa.

ORAL DOSAGE. In the oral use of the drug an attempt should be made to obtain an immediate high concentration of aureomycin in the blood and tissues.

For severe infections, which includes all cases of rickettsial infections and Q fever, the oral dosage should be 50 to 100 mg. per kilogram per day. Much larger doses have been given without untoward results. Cases of typhoid fever and salmonella infections have received from 300 to 500 mg. per kilogram per day.

Moderate infections, including primary atypical pneumonias, should receive from 25 to 50 mg. per kilogram per day orally for a period of from 5 to 14 days according to clinical response. However, if definite therapeutic effects occur within the first few days, the dosage may be reduced to the lower range. The drug should be administered every 4 hours during the first 24 hours, then every 6 hours.

FORMS AVAILABLE. Aureomycin is available in capsules containing 0.25 Gm. for oral use. The ophthalmic package contains 25 mg. of aureomycin in a dropper assembly. Both are marketed by Lederle Laboratories.

EYE INFECTIONS. The local use of aureomycin in 100 cases of staphylcoccal, pneumococcal, and influenzal conjunctivitis has been reported by Braley and Sanders.[12] These workers have also used the drug both locally and intramuscularly in an additional 200 patients with a wide range of ocular infections. The results of the latter study are summarized in the following table.

RESULTS OBTAINED IN AUREOMYCIN TREATMENT OF 200 OCULAR INFECTIONS

Infection	*No. of cases*	*Clinical cure*	*No improvement*
Conjunctivitis			
Staphylococcus aureus			
mild	22	21	1
severe	74	73	1
D. pneumoniae	5	5	
H. influenzae	4	4	
Moraxella lacunata (diplobacillus of Morax-Axenfeld)	5	4	1
E. coli	1	1	
Follicular (etiology unknown)	14	14	
Inclusion conjunctivitis	5	5	
Trachoma	1	1	
Vernal	6	2	4
Epidemic keratoconjunctivitis	27	8	19
Molluscum contagiosum	1		1
Parinaud's conjunctivitis (leptotrichosis)	1		1
Keratitis			
Dendritic (herpes simplex)	6	5	1
Unclassified (etiology unknown, probably infectious)	7	3	4
Acne rosacea	3	1	2
Superficial punctate (virus?)	2	1	1
Neurotropic	2		2
Marginal, severe	1	1	
Pinguecula	1		1
Episcleritis	1		1
Uveitis			
Idiopathic	5	4	1
Lymphogranuloma	1	1	
Scrafuloderm with uveitis and keratitis	2	2	
Sympathetic ophthalmia	2		2
Endophthalmitis, metastatic	1	1	

The commercially available package for ophthalmic administration contains 25 mg. of aureomycin hydrochloride with 25 mg. of sodium borate and 62.5 mg. of sodium chloride. It is readily soluble in water. In solution at room temperature the material loses its antibiotic activity in approximately 24 hours. But if kept refrigerated, it will remain stable for approximately 2 days. The 0.5 per cent solution for instillation is prepared by adding 5 cc. of distilled water to the contents of the bottle containing 25 mg. of aureomycin with the other two salts.

The dosage is one or two drops in the affected eye, or preferably in both eyes every two hours, or oftener, depending upon the severity of the infection. Very severe infections may require days of treatment, whereas other cases may be cured by instillation with much less frequency for 48 hours. Combined local and oral therapy is preferred in Diplobacillus (Morax-Axenfeld) ulcers, Friedlander bacillus ulcers, and in general where there is severe infection.

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CHLOROMYCETIN

A NEW ANTIBIOTIC EFFECTIVE IN TREATING CERTAIN RICKETTSIAL DISEASES IS AVAILABLE FOR EXPERIMENTAL USE. SOME OF THE DISEASES SUCCESSFULLY TREATED WITH CHLOROMYCETIN INCLUDE - - THE TYPHUS FEVERS, TSUTSUGAMUSHI FEVER, AND ROCKY MOUNTAIN SPOTTED FEVER.

Chloromycetin, a new antibiotic obtained from soil, may be a specific drug treatment for a large class of rickettsial diseases just as penicillin is specific for certain bacterial infections. The Rickettsiae are responsible for such diseases as typhus fever, Rocky Mountain spotted fever and scrub typhus, for which a satisfactory treatment has not heretofore been available. Preparation of crystalline Chloromycetin and the early experimental work to determine its value in the treatment of diseases were carried out at Parke, Davis and Company. Tablets of 0.25 gram are available for experimental use.

The Rickettsiae is a class of disease-producing organisms which occupy a place intermediate between the bacteria and the filterable viruses.[6] They resemble the bacteria morphologically although the rickettsia organisms are considerably smaller than most bacteria whereas they resemble the viruses in that they have not been cultivated in the absence of living cells.

The relationship of the "species" of Rickettsia to one another is not clear and present knowledge does not extend beyond the immunological relationships of the pathogenic forms. Closely related species of the Rickettsia tend to fall into three well known groups which are pathogenic for man. These include: the Rickettsia of the typhus fever group of diseases; those of the spotted fever group; and those of the tsutsugamushi group. The typhus fever commonly known as "Scrub typhus" belongs to the latter group.

Diseases caused by a Rickettsia are all transmitted by an insect vector. General symptons of infections caused by this group of organisms include fever, headache, general aches, a cutaneous rash, and usually with nervous and mental symptoms. Because the organism which causes the disease grows only in cytoplasm of living cells and cannot be maintained like most pathogens on artificial media, tests to determine the value of drugs in certain rickettsial diseases must be carried out by tissue culture methods and chick embryo inoculation.

Experimental work using Chloromycetin indicates that it is effective against all the Rickettsiae studied and affords greater protection than any other agent yet tested. It is administered in small doses, either orally or parenterally and even the largest doses produced no toxic symptoms in the control animal. Clincally, it has yielded favorable results against typhoid fever,[18] epidemic typhus, scrub typhus, and Rocky Mountain Spotted Fever. Laboratory tests show that Chloromycetin is also effective against undulant fever, Friedlander's pneumonia, urinary tract infections and some bacillary dysentaries. Experimental studies which have been carried out to date show that Chloromycetin therapy has the following advantages in treating certain diseases caused by Rickettsiae: it is apparently without toxicity; it is readily absorbed from the alimentary tract; and it showed beneficial effects when given relatively late in experimental diseases.

From a streptomyces found in the soil originating in Venezuela, Chloromycetin was first obtained by John Ehrlich and associates[4] working in the Parke, Davis, and Company Laboratories. Bacteriological tests showed that this organism inhibited growth of a wide variety of gram-positive and gram-negative micro-organisms. The crystalline product, Chloromycetin, was isolated from the filtrate and tests were carried out to determine its chemotherapeutic activity. When injected into chick embryos[12,17] and mice, it was found effective against several rickettsial and virus diseases.

The drug is only slightly soluble in water but is soluble in propylene glycol for parenteral administration.[17] A suspension of the drug in water proved irritating when administered to dogs intramuscularly. It is a neutral compound stable in aqueous solution for over 24 hours at pH range from 2 to 9. It is unaffected by boiling in distilled water for five hours.

ADMINISTRATION AND DOSAGE

Chloromycetin can be administered either orally or parenterally and it has been found that serum levels of the drug after oral administration are parallel with those after parenteral injec-

tion. In spite of its bitter taste, Chloromycetin is well tolerated orally.

Since Chloromycetin is rapidly absorbed from the gastrointestinal tract, frequent oral administration is indicated in order to maintain the antibiotic at an effective blood level. With an initial dose of 1.0 gram followed by 0.2 gram doses every four hours the antibiotic can be maintained at an effective blood level.

Most of the early reports on the therapeutic use of Chloromycetin have dealt solely with the use of the drug over short periods up to 8 to 10 days. Consequently, studies will be necessary to determine whether the continued use of the drug in humans for long periods of time will provoke toxic symptoms.

CLINICAL RESULTS

Clinical studies using Chloromycetin which were carried out by Smadel and his associates resulted in sufficiently encouraging results to warrant further tests using this drug in treating certain rickettsial and virus diseases, particularly those caused by the Rickettsiae.

THE TYPHUS FEVERS - This group of diseases include several closely related affections which occur in various parts of the world. Rickettsia prowazeki, the causative agent, occurs in two varieties, each of which is responsible for a type of typhus fever--epidemic typhus and endemic typhus (murine typhus). According to Jordan and Burrows,[8] both types may exist in endemic and epidemic form and the differentiation between the two typhus fevers is not sound. Some authors believe that the two forms of typhus fever differ in many respects; others believe that clinically, the two forms do not differ appreciable. Beckman[2] has distinguished between the two by indicating that epidemic typhus is a louse borne rickettsial fever whereas endemic typhus is a flea-borne rickettsial fever.

Case fatality of the typhus fevers is highly variable--it has been as great as 70 per cent in some epidemics, and 20 to 30 per cent is not uncommon. In endemic typhus it may be as low as five per cent. The disease can be prevented, or at least modified by immunization, but there is still some question as to the value of the vaccine.

General symptoms of the typhus fevers include a sudden chill and rise in temperature accompanied by nausea and vomiting and a headache; sometimes there are aching pains throughout the body also. Symptoms of endemic typhus differ from those of epidemic typhus only in that the attack is much milder and complications rarely occur in endemic typhus.

In a study carried out in Mexico, D. F. by Smadel and associates,[14] five patients having typhus were treated with Chloromycetin and an equal number served as controls. Treatment was begun on the fifth and eighth day of disease at which time three of the patients exhibited a high grade fever, high pulse rate and a rash, and one patient was in delirium. Each patient was given an initial oral dose of 1.0 to 2.0 grams followed by a 0.2 gram oral dose every four hours. In all cases a rapid fall in pulse rate and body temperature was noted. Within three days delirium disappeared, and the rash disappeared within 3 to 5 days after which no toxic reactions were noted.

An epidemic of typhus in Bolivia[10] offered another opportunity for clinical trial of Chloromycetin. Sixteen cases of epidemic typhus and five controls were studied with the purpose of determining human tolerance of Chloromycetin, and at the same time noting the clinical results. In these tests, Chloromycetin was administered either intravenously, 10 mg. per kg. of body weight for three days, or orally in doses of about 15 mg. per kg. of body weight for three days. The solution for intravenous use was dissolved in an organic solvent (0.1 gram per 10 cc.) and the tablets contained 0.1 gram of the drug. The favorable effects of treating epidemic typhus with Chloromycetin appeared rapidly and the patients entered convalescence within three days. Rapid recovery followed slow intravenous injection, with headache and visual disturbances beginning to improve ten minutes after the injection was completed. Three hours after the first injection, the headache and backache had usually disappeared and vision was apparently normal.

THE TSUTSUGAMUSHI GROUP (Mite-borne Rickettsial Fever) - This group includes three rickettsial diseases--Tsutsugamushi Disease (Japanese Flood Fever, Kedani Fever), Mite Fever of Sumatra and "Rural Typhus" or "Scrub Typhus" of Malaya, all of which closely resemble one another in that they are immunologically identical.

A recent outbreak of scrub typhus at Kuala Lumpur[15] offered an opportunity for making extensive tests using Chloromycetin. Clinical experiments were carried out at the Malaya Institute where 25 hospitalized patients were treated with Chloromycetin and 12 untreated patients served as controls.

Treatment was begun on an average of 6.2 days after the onset of the infection. The 25 treated patients were given an initial oral dose of approximately 50 mg. of Chloromycetin per kg. of body weight followed by 0.2 to 0.3 gram of the drug by mouth every 2 to 4 hours for a variable time. Patients treated first were given as much

as totals of 8 to 15.5 grams of the drug but duration of treatment was gradually shortened and at least 7 cases were given only about 6 grams of the drug over a 24 hour period of therapy.

Fever subsided in the treated patients within an average of thirty hours after the initial dose whereas the untreated patients remained febrile for an average of eighteen days. Rickettsemia disappeared within twenty-four hours after the initial dose, and the rash within forty-eight hours. Treated patients were discharged from the hospital on an average of thirteen days after beginning the treatment whereas untreated controls remained on an average of 30.7 days after onset. Two complications developed and one death resulted among the untreated controls.

ROCKY MOUNTAIN SPOTTED FEVER (Tick-borne Rickettsial Fever) - This is one of the spotted fevers which resembles typhus fever but the rash is generally more extensive and the nervous symptoms may be more pronounced. However, in areas where both diseases prevail it is exceedingly difficult to distinguish them on clinical grounds alone. Rocky Mountain Spotted Fever is transmitted by ticks--either the wood tick or the dog tick. The disease is prevalent in the Western states in the Rocky Mountain region and in the Eastern United States in the South Atlantic States such as Maryland, Virginia, West Virginia, and North Carolina. Fatality of the disease is highly variable in different parts of the United States but considering the country as a whole, the fatality rate is 18 to 19 per cent.

Symptoms of Rocky Mountain Spotted Fever include a history of exposure to ticks and of tick bite, persistent fever since day of onset until administration, characteristic rash and secondary infections which include prominence of headache, mental dullness, torpa or delirium, palpable spleen, tarsal conjunctivitis, slight periorbital edema and photophobia.

Since Chloromycetin has proved effective in treating the typhus fevers, it was believed that it might also be valuable in treating other rickettsial diseases.

In a series of 15 cases of Rocky Mountain Spotted Fever treated at University Hospital in Baltimore, Maryland, favorable clinical results were evident following Chloromycetin therapy.[11]

Tablets containing 0.25 gram of the drug were administered orally. Since the drug is very bitter, the tablets were pulverized and suspended in water or in dilute chocolate syrup or given in gelatin capsules when administered to children. Dosage of Chloromycetin in these clinical studies was based on doses reported as effective in treating scrub typhus. After a large initial dose (administered in 2 or 3 parts at approximately one hour intervals) arbitrary doses of 0.25 gram every three hours were administered to patients under sixteen years of age and 0.5 gram for those over sixteen.

Following Chloromycetin therapy, improvement in the patients' symptoms after the first 24 hours was uniformly observable but not striking. However, abatement of such symptoms as headaches, mental dullness, etc. was definite on the second day of treatment. Also, eruption did not spread after treatment and by the end of the second day of treatment had receded. By the third day, the patient was practically free of symptoms. In all cases studied, the temperature fell to normal levels within 76 hours after initial dose.

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DIHYDROSTREPTOMYCIN

A NEW DERIVATIVE OF STREPTOMYCIN HAVING SIMILAR ACTION BUT WITH CERTAIN ADVANTAGES.

Dihydrostreptomycin, a derivative of streptomycin, offers a new drug having action similar to that of streptomycin but with certain advantages. The dihydro compound, which is derived from streptomycin by reduction with hydrogen, is markedly less neurotoxic than the parent substance and it may be used in greater daily dosage over longer periods of time. The lesser toxicity of the new compound was not obtained at a sacrifice of the antibacterial activity of streptomycin. Clinical studies appearing in the November issue of the American Review of Tuberculosis indicate that dihydrostreptomycin is a valuable adjunct in treating certain types of tuberculosis. This series of papers also include reports on the pharmacological properties of the dihydro compound and studies on the effect of it in tuberculosis in animals as well as the clinical studies.

In the clinical reports, the authors conclude that dihydrostreptomycin seems to be as effective as streptomycin. The fact that it can be tolerated longer by the patient before toxic manifestations become apparent is a definite advantage because one of the limiting factors in the use of streptomycin is that the drug has toxic effect on the nervous system of the patient, causing dizziness and sometimes temporary deafness. It is further pointed out by the clinicians that the lower neurotoxicity of the dihydro derivative also suggests that it is preferable to streptomycin for the treatment of patients who require large doses or long courses of the antibacterial.

These early studies to determine the value of dihydrostreptomycin have been conducted at the New York-Cornell Medical Center, New York City; the Mayo Clinic, Rochester, Minn.; the Squibb Institute for Medical Research, New Brunswick, N. J.; and the Merck Institute for Therapeutic Research, Rahway, N. J.

Discovery of Dihydrostreptomycin resulted from the experimental hydrogenation of streptomycin. The new form showed no significant difference in activity against the tubercle bacillus over streptomycin in a test tube, but in spite of this fact, further clinical studies were persued and the absence of the expected degree of nerve damage noted.

ADMINISTRATION AND DOSAGE

Dihyrostreptomycin should be administered by the intramuscular route only. It is readily soluble in sterile pyrogen-free water or sterile isotonic sodium chloride solution. Pending more clinical experience with this new compound it should not be given intravenously or intrathecally. Pain associated with the intramuscular injection of dihydrostreptomycin may be minimized by observing the following precautions: (1) Minimum interval of injection is 6 hours; 12-hour intervals are preferable. (2) Use only fresh solution. (3) Maximum injection: 2 cc. of solution into any one site. (4) Inject high in upper outer quadrant of buttocks, but change site for each injection. (5) Insert needle deeply and inject solution slowly. (6) 1% of a local anesthetic such as procaine hydrochloride in distilled water may be used to dissolve the dihydrostreptomycin.

The average dose is 1 to 2 grams in divided doses every 12 hours. However, the sensitivity of the infecting organism and the stage, severity, and type of infection will dictate the dosage to be used. The dosage recommended in the different types of tuberculosis varies somewhat. It is suggested that concentrations of 250 to 500 mg. of dihydrostreptomycin per 1 cc. be used. Since the preferred limits are 2 cc. of solution per injection the concentration must be adjusted to the size of the daily dose.

TOXICITY

Clinical studies indicate that dihydrostreptomycin is less likely to produce eighth-nerve dam-

(continued on page 271)

One who attended the 1948 Institute on Hospital Pharmacy evaluates her experience - - what it has meant to her as a pharmacist, to her hospital and to pharmacy as a profession.

PRACTICAL RESULTS OF 1948 INSTITUTE

By Betty J. Hageman, Pharmacist
Albany Hospital
Albany, New York

Have there been changes made in your Pharmacy? Can you say honestly that in the last six months you have made some forward steps in the way in which you do your routine work--or that you have increased your service to the patient or the hospital? If so, have you stopped to reason what has motivated these changes? It could be a number of things--such as a speaker at a pharmaceutical meeting, an article in a professional journal, a visit to another hospital pharmacy, or an informal talk with a person who is full of ideas and suggestions. Or could it possibly be that you were one of the 135 fortunates who attended the Third Institute on Hospital Pharmacy at Princeton last June? If so, it was not mere luck if you felt you returned to your hospital inspired and full of enthusiasm--it was practically inevitable!! As someone nicely wrote recently, "The Institute was inspiring, and I returned with the desire to make my pharmacy the best ever!" I thought this feeling was general throughout the group when the Institute was over; however, I wanted to actually hear or read it in so many words from some members of the group. Also, I could not help wondering if on returning to their hospitals, they had really done something--or, if once away from the source of enthusiasm and inspiration, they had proceeded as if never having had such an experience. Now, after a little such correspondence, I am even more encouraged than ever in the future of our profession, for if the majority of the group throughout the country are proceeding as are my correspondents, the dreams are unlimited.

First of all, I knew how I had reacted after a week of Institute, and I was sure that everyone had gleaned a few practical suggestions; but I doubted if anyone had felt as complete a metamorphosis in such a short period of time. Now I believe that the week had a distinct effect on everyone--only varying as to degree. Prior to this experience, I felt that I was in a definite rut, had learned all that I was ever going to in my present position, and that my only solution to this complacency would be to change locations. So, I went to the 1948 Institute for a "lift" by means of listening to talks on new drugs and pharmacology (my idea of an Institute). Little did I realize the possibilities of hospital pharmacy.

You ask how this change came about? Well, it was not entirely the fine lectures, but also the people with whom you were in contact. Everyone was friendly, interested, and completely informal, and they all went out of their way to listen to you and offer suggestions. As someone recently wrote, "I would say that if the Princeton Institute did nothing more than to boost the morale of each person present by discussing mutual problems even out of the official sessions, then I think it would have accomplished a good deal in furthering professional hospital pharmacy!"

"Then, too," someone else added, "I solved some of my problems at the Institute and found that others had similar problems. Every hospital seems to be slightly different from another even though they be classified the same and have the same number of beds. I found that I would solve a problem one way and someone else would come up with a different answer using the same facts. However, not only in the meetings, but from individuals, I obtained a great deal of material to work over--such as addresses for materials and drugs,

as well as procedures. I certainly will attend next year if the hospital is willing." Evidently a unique characteristic of hospital pharmacists is that they are anxious to share anything that may help another, such as an address for a company supplying a drug which seems difficult to obtain, or some practical time or work-saving suggestion.

To get back to myself. By the end of the week, in spite of more lucrative offers, I could hardly wait to get back to my hospital and begin work. I had so many ideas, some which would obviously have to ripen longer than others; some I could begin to do almost immediately. Would this new found enthusiasm last until the next Institute? However, these contacts are just the same by letter as in person, and when you hear of their accomplishments, you dig in twice as hard. It is a cycle.

Actually, this metamorphosis made me realize that it is not what the pharmacy and its staff are doing for me and my future, but really what I could be doing for myself and my profession.

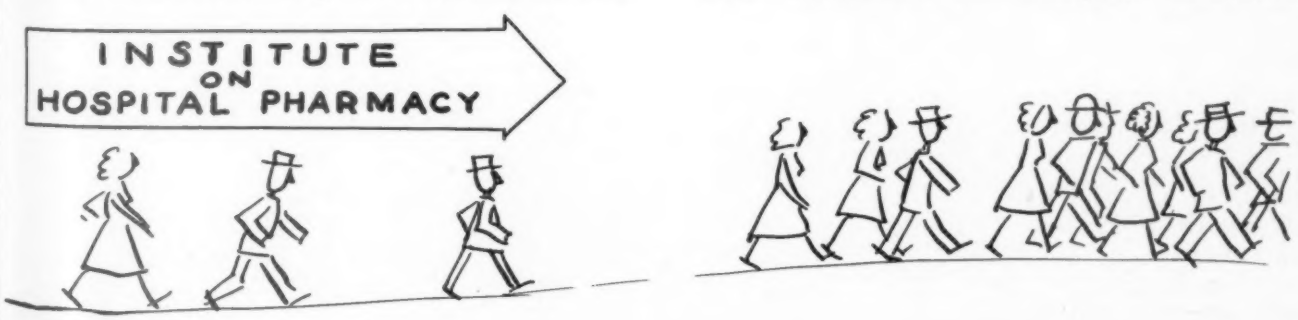
I came back with almost complete confidence in myself and plans to go to the chief pharmacist and administrator, to request what additional equipment and personnel were needed, and to state exactly what could be saved through efficient service and profitable manufacture. I was sure that I knew what I was promoting, and that I could be proud and confident of the source from which I had received my information. Authoritative sources proved convincing evidence when anyone showed signs of hesitancy as to the merit of an idea or formula. I found myself automatically plugging the Institute at every opportunity. Incidentally, when they tell you casually at the Institute to make mention of the "top" men who were on the lecturing staff, for the purpose of gaining respect for both you and the national organization, you little realize that you will soon be doing it nonchalantly in any number of instances. And it works too, for this faculty is picked because of their ability in relation to pharmacy, and are outstanding men who are known by all.

And so, as you can see, I had changed; and in turn, I immediately wanted to change, first of all, my plans for the future, and then my procedures as far as manufacturing and records were concerned. Secretly, I was also changing my dreams --dreams that now include an entirely new pharmacy in a new wing of the hospital with equipment I hope to have purchased in the meanwhile placed in the most convenient spots. At this point it does not matter how long I must wait for the realization of this dream, for there are so many things that must be changed in the meanwhile. Progress is retarded since people are naturally resistent to changes.

So, since July, we at the Albany Hospital have "gritted our teeth" and "hoisted our skirts" and have worked as never before. You who have personnel and financial problems know what it is sometimes just to get routine work done each day. Then, perhaps you can guess what it is to try to institute new systems, such as making and dispensing all narcotic solutions. The only gratification you get is the feeling of a forward moving accomplishment and once in a while a word of appreciation. That is when you enjoy coming home to your mail and finding a letter from someone who has done twice as much as yourself under similar conditions. Think how I felt one night to read that Jane Rogan in the Evangelical Deaconess Hospital in Detroit had made the following accomplishments this summer:

1. Placed an order for a ten-gallon-per-hour still with automatic controls.
2. Acquired an extra room for manufacturing next to the pharmacy - - 12 x 14.
3. Received a homogenizer.
4. Ordered a ten gallon HySpeed Alsop electric mixing tank.
5. Received a new typewriter with pharmacy symbols.
6. Prepared for publication of a Formulary.
7. Layed plans for installing a system such as the Fenwal, for the manufacture of novocaine solutions, etc.
8. Made plans for revising the manufacture and treatment of ophthalmic solutions.

Jane also made some interesting comments as to her personal reaction to the Institute. Princeton was her second experience, and as she said, "I go to Institutes with a definite program of ideas and items which I wish to confirm or disafirm. Enthusiasm runs rampant. Then when I



return, there is a period of hard work to organize the material I have received, to write letters, to obtain information, to convince the superintendent, and to plan a program for the year. Since everything I would like to do is impossible, we, that is, my assistant pharmacist, the superintendent and I decide what is the most important. We plan a campaign for the year and then attempt to carry it through. It takes plenty of hard work.

"In this manner perhaps we accomplish a portion of what was discussed at the Institute. Then the following year I go again to build more ideas and regain enthusiasm."

Incidentally, aside from all this, she has also done some organizing of her administrative work, such as developing new forms for alcohol reports, and so forth.

Mr. E. C. Wentworth of the Central Maine Hospital in Lewiston, Maine, has organized a new system of narcotic control for his hospital as well as a new pharmacy now located on the second floor rather than in the basement. These items he passes over briefly along with mentioning new equipment. However, he wrote to some length about how he regretted that this was his first Institute and how he would try to never miss one again. He knew he had gained so much in the way of knowledge and personal advantages that he actually regretted to see the week at the Institute draw to a close.

I am sure several have instituted the manufacture of narcotic solutions and the use of them in place of hypo tablets as have we. Mr. Propt of New York City is also one such person. I enjoyed a paragraph written by Mr. Albert Lauve from Mercy Hospital in New Orleans upon receipt of a letter of mine which must have sounded to him as almost complete despair in regards to this new venture. "Nurses, as a rule, will object to parenteral narcotic solutions at first, even though it saves them considerable time because they do not understand the technic of keeping check on the volume of remaining solution. Do not become discouraged over opposition. It is all in a day's work. The manufacture of sterile parenteral solutions is a normal pharmaceutical function, and if we expect to maintain the concept of professional dignity in the hospital, we must develop and expand this important function. The hospital certainly needs this type of service today." Don't think that this sort of friendship made at Institutes and carried on by mail doesn't make all the difference in the world in your persistence of an idea.

Persistence, for example, has helped us to get a HySpeed Alsop electric mixing tank with which we will make our own milk of magnesia and aluminum hydroxide gel from the concentrated magmas, as well as many of our other large quantity liquid products which we have been making by more time-consuming methods. Then, too, we have purchased smaller equipment such as fritted glass funnels, a suction filter apparatus and siphon systems.

We have adopted Milton Skolaut's formulas for the manufacture of sterile buffered ophthalmic solutions as has Martha Coffield in the St. Joseph Infirmary in Atlanta, Georgia. She passed on the news that from her correspondence, many "Instituters" are in the process of building or expanding with the idea of installing a system for the manufacture of parenteral solutions.

From Iowa City, Sister Mary Catherine of Mercy Hospital listed a general summary of accomplishments which she felt had been a direct result from the inspiration and knowledge she had received over the period of attending three Institutes.

1. An annual inventory of drugs.
2. Organization of a Therapeutics Committee.
3. A hospital Formulary to be distributed by January, 1949.
4. A perpetual inventory of major items.
5. Preparation of practically all elixirs, solutions, (not parenteral) tinctures, syrups, ointments, and liniments.
6. A new Pharmacy to be completed about January, 1949, with space and facilities for the preparation of parenteral solutions.
7. More study, greater interest and better service to the patients generally.
8. An ardent desire to attend the Institute of 1949!!!

I especially like the last item.

A limiting factor other then finance and personel, is government control under which the U. S. Public Health Service and Veteran's Administration Hospitals operate. However, some pharmacists such as Margaret Gary in the U. S. P. H. S. Hospital in Norfolk, have been able to make some advantageous changes in the record and of the work. For example, she has instituted manufacture and ward records as well as a number system for inpatient and outpatient prescriptions. From these records she will have something tangible on which to base all future requests for equipment and personnel.

Some of the branch men of the V. A. who attended have brought into use in their areas such time saving gadgets as the T. T. and H. T. counter shown at the Gadget Show. They left with the feeling of being better acquainted not only with outstanding men in this field but also with the plan that these men have for the future of hospital pharmacy. And, after all, the V. A. hospitals, being the medical centers they are, could and should, take a definite part as well as interest in this future.

Norman Baker in Norfolk General Hospital, Norfolk, a pharmaceutical enthusiast if there ever was one, has had to shelve his "pearls" which he

brought back from the Institute and stick strictly to routine because of a personnel problem. At least, we know it will not be indefinitely, even though it probably seems so now.

From Kitchener, Ontario, St. Mary's Hospital, Mary Asquith writes that she is outlining an accounting and indexing system, as well as discussing the formation of a Therapeutics Committee. She has also increased the quantity of their sterile solutions plus installing an especially made prescription file and magazine stand for professional journals.

As you can see, this could go on indefinitely, but our purpose was to make those who have attended Institutes realize that others such as themselves are still plugging against many of the same odds, but despite these obstacles are making advances. To those who have not attended an Institute we hope that they can realize the value of a week's association with sympathetic and interested coworkers.

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(continued from page 267)

DIHYDROSTREPTOMYCIN

age than are comparable doses of streptomycin. It has been administered with good results to patients who have shown sensitivity to streptomycin.

As with streptomycin, vestibular dysfunction bears a relationship to dosage and duration of treatment and has occurred in patients receiving 3 to 5 grams per day over a thirty to sixty-day period. It can occur at lower dosages when there is renal impairment which interferes with excretion of the drug. Patients with normal renal function usually tolerate 1 to 2 grams daily.

All patients under treatment with dihydrostreptomycin should be watched for various side reactions, such as pain and tenderness at the site of injection, headache, skin eruptions, eighth-nerve disturbance (vertigo, tinnitus, deafness), paresthesias about the face, and renal irritation. When skin or allergic reactions occur and cannot be controlled by antihistaminic drugs, it may be necessary to discontinue the drug.

When dihydrostreptomycin is to be given in high dosage for a long period of time, the patient should be warned of the possible occurrence of side-effects. Tests for vestibular function and audiometric determination should be made before treatment is started and periodically throughout the therapeutic course. Clinical judgment must be excerised as to the advisability of discontinuing the drug or decreasing the dosage

INDICATIONS

Dihydrostreptomycin is used only as an adjunct to other measures in the treatment of tuberculosis. It is not a definitive treatment and is not a substitute for rest, nutrition, and other routine treatments. Dihydrostreptomycin is contraindicated in primary and minimal pulmonary tuberculosis which will respond to routine treatment, since there is the danger that resistant organisms may develop. Unnecessary use of the drug may interfere with its effectiveness when there is a more serious need. When other measures, such as collapse therapy are indicated, they should be instituted early in the treatment before the organism may develop resistance.

ABSORPTION AND EXCRETION

Dihydrostreptomycin is readily absorbed following intramuscular administration. It is excreted by the kidneys more slowly than penicillin. In addition to that present in the tissues and blood serum, a small amount diffuses into the spinal fluid and into the pleural and peritoneal cavities. In cases of impairment of renal function, care must be taken in adjusting the dosage; a lesser amount may be required because of retention of the drug, and serious toxic reactions can occur with dosages that other patients tolerate.

HOW SUPPLIED

Dihydrostreptomycin is available from Eli Lilly and Company, Merck and Co., Parke, Davis and Co., and E. R. Squibb and Sons. It is supplied in 20 cc. rubber-stopper ampules containing 1 gram of streptomycin base and in 50 cc. vials containing the equivalent of 5 grams of streptomycin base. Either the hydrochloride or the sulfate salts of dihydrostreptomycin is used.

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DETAIL MAN -- Hospital Pharmacists' Friend

HOSPITAL PHARMACISTS WILL PROFIT BY READING THIS ARTICLE WHICH WAS WRITTEN FOR DETAIL MEN. THE AUTHOR SUGGESTS WAYS IN WHICH DETAIL MEN REPRESENTING PHARMACEUTICAL COMPANIES CAN SELL TO HOSPITALS AND HOW THE PHARMACISTS CAN ALSO PROFIT FROM THEIR VISITS.

By Herbert L. Flack*
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About a year ago, I prepared an article for Tile and Till, titled "Cooperation--Keynote of the Future". In that article I spoke about the pharmaceutical manufacturer and his professional service representative. At that time, I wrote, "It is the hospital pharmacist's obligation to the manufacturer to extend the courtesy of allowing visits by his professional service representative. The pharmacist can often gather valuable information from these calls. The professional service representative's obligation to the hospital pharmacist is to give him the same information he gives physicians and at the same time or earlier."

Since that time, I have gained another year of experience in dealing with the pharmaceutical representative. On top of that I have recently written to ten prominent hospital pharmacists in the East, to obtain their impression of proper relations between the hospital pharmacist and the pharmaceutical representative. This latter I accomplished after I had been invited to join your group for this morning's meeting. I hope the information that I present will be accepted as not only my views, but as the views of male and female pharmacists, including Catholic sisters, in pharmacies ranging in size from 150 to about 800 beds. A few of these persons operate a "one-man" type of hospital pharmacy, since the needs of the hospital do not require additional pharmacist personnel. To these persons, time is possibly even more valuable than it is to me, for I do have a staff of five and one-half pharmacists who can carry on without requiring my immediate presence.

To digress for a moment, I would like to explain this half a pharmacist that I just spoke of. No he is not a midget or anything like that. This person is an intern in pharmacy at this hospital and a graduate student at the Philadelphia College of Pharmacy and Science. He is enrolled in post-graduate study in hospital pharmacy, leading to the Master of Science in Pharmacy degree. This course is of two years duration and encompasses about 50% lecture and laboratory instruction and 50% internship in the hospital. In my own case this means that the student has a choice of several courses at the Philadelphia College of Pharmacy and Science the first school year, which courses occupy about one-half of a six day week, the other half of the time being spent in the hospital pharmacy. The second scholastic year is given about half time to internship and half time to a really good lecture and laboratory course in bio-chemistry and pharmacology taken with the medical students at Jefferson Medical College. Here my students have an excellent opportunity to mingle with these future physicians, to get an insight into their thoughts on medical and pharmaceutical practice. They have an opportunity to overcome the thought that the physician is some sort of "god" and to realize that he is indeed a human being with good and bad traits just like we have. The only difference is that the medical student has been exposed to a little more academic training than the pharmacist has, and the one is specializing in the actual diagnosis and treatment of the patient, while the other person - the pharmacist - is specializing as consultant to the physician in the specific art of compounding and dispensing of drugs, and dispensing of information about drug therapy. My boys also have the opportunity while taking these classes with the medical students, and while living in the same quarters as the intern and resident physicians during the two year period, to sell the value of competent pharmaceutical service to these young physicians, who will be the physicians who guide medical practice and medical thinking of the future. If they do a good job of selling pharmacy to these young physicians, then your job as a medical service representative and my job as a hospital pharmacist will be made easier and more desirable.

Anyway, this graduate instruction - internship course just began the past scholastic year. Though there were to have been three appointments, only one person was felt to have the exceptional qualities desired. This one pharmacist, since he is with us as an intern only half a week, is considered one-half a pharmacist. Actually, the interest that he shows in his rotating duties in the department, might well change that designation to 5/8ths or 3/4ths

* Presented at a meeting of the Philadelphia Sales Club of Sharpe and Dohme, Inc., May 1, 1948.

of a pharmacist despite the fact that he is available only half time.

GREAT EXPECTATIONS

There is no doubt that the medical service representative or detail man, especially if he is a pharmacist, can be a valuable aid to the hospital pharmacist. I have accumulated much information from these representatives that is of value in speaking with the physicians and that is even of value in some of our manufacturing and other processes in the hospital pharmacy.

There are certain things that I expect of these representatives, and they follow:

1. The representative should be able to present a concise summary of new products that have been released since his last visit, and he should have a few brochures to leave that will present product information on these new items. In fact, I am requesting that detail men leave a brochure on a new product for each staff pharmacist, also. It would also be greatly desirable from my viewpoint, and eventually, I believe, from the company's viewpoint to have the representative leave the pharmacist a physician's sample of the new product, sufficient for the first call for the item. I will explain more about this later.

2. If this new product is just an exact duplication of existing products, as often occurs, and merely has a different trade name, I would recommend that the detail man merely mention same, and not try to go into a long story about the merits of his product as against the product or products which he is duplicating, which is presently available.

3. The representative should have new price information. He should present price changes-increases or decreases-to the pharmacist. I think it is wise for the representative to not only inform the pharmacist of the price change, if it is some article that the pharmacist is using or might use, but the representative might provide a service by making certain that the new price is entered in the catalog. This takes only a few minutes, and not only insures that the catalog is kept up to date, but I believe, it makes a little nicer relationship with the pharmacist, for it shows that the representative is not only trying to get something from the pharmacist, namely business, but that the representative is willing to give something to the pharmacist to facilitate his efficient operation. (We will discuss the subject of gifts later).

4. The representative should present information on which physician in the hospital is using which experimental drugs, and for treatment of what condition. It is unfortunate that the representative is not given this information about the physicians of the hospitals which he contacts, but such is the situation. If the representative does hear of the use of a new product, I firmly believe that he should confide such information in the pharmacist. It is really embarrassing to have a physician call for the drug and you don't even know it is being used, who has a supply of it, and what it is being used for, its supposed advantages, or the results of the work.

5. The representative should inform the pharmacist of any new product he is detailing in the hospital, before he details it. An example can be presented of a representative who did not bother with the pharmacist until too late, and his product has been bitterly opposed in my hospital ever since. In fact, that product has been most thoroughly talked down by my staff to any physician who has considered using it.

6. One pharmacist stated he would like to get the same reprints and information that is given to the physician. With increasing educational and experience requirements, the chief pharmacist of a hospital is fully capable of understanding such literature as is given to the physician--in fact the retail professional and hospital pharmacist are fast becoming the physician's consultant on modern drug therapy. They must have such literature available.

7. Another pharmacist, a Catholic sister, felt the representative needed an insight into the pharmacist with whom he is dealing, and should use good judgement in discussing products. She stated, "Too frequently I meet one who gives me the impression that he thinks I don't know how to read or that I never look at a piece of literature. After I read a brochure on a product, I feel it is useless and a waste of time to hear a memorized repitition of some advertisement on a product, especially if the gentleman cannot answer an intelligent question about the item. Therefore, have the men use a different approach such as, have you heard of this product, or do you wish to hear about it, or do you have any questions about this product. In this way, if the pharmacist is well versed, he can save his time and patience by just stating that he has sufficient information about the product."

8. The representative should be kept advised of availability of supplies and should keep the pharmacist informed of such. He should use this not as a wedge toward overstocking the pharmacist but as an aid to the pharmacist in maintaining proper amounts of supplies.

THE DETAIL

The modern hospital pharmacist is a busy man. Whether he be in a "one-man" department or in a pharmacy with several assistant pharmacists, his time is valuable. I believe that if you keep this

thought constantly in mind-that the pharmacist you are detailing is busy and is graciously allowing you the opportunity to detail him-you will find relations to be on a much better plane than might otherwise be found. Consider the pharmacist in the same light that you would consider the toughest physician you have to detail, and you will be rewarded by friendly relations and a good percentage of business.

One of my colleagues in New Jersey has stated that she resents the detail men calling at lunch time or during the busiest time of the day. I have noted that point also, for despite the fact that I have requested my detail men to call before 11:30 AM or after 12 noon, they formerly bunched up about the noon hour, and then I was really not pleased to see them. Consequently, I was not in a receptive mood and was just a little abrupt in getting the detail over soon. In fact, I have taken steps in my own establishment to swing orders for competitive items over to the detail men who call either early in the morning or late in the afternoon and who respect the fact that I have a strict schedule for lunch. I have also taken the step to have my secretary inform the detail men who are waiting by 11:30 that they will either have to wait until noon, or should call later in the day. This has helped to discourage the practice of bunching up around mid-day in my hospital.

I really want to see the majority of detail men who call on me and thus I am about to institute a program of appointments for detailing the chief pharmacist in my hospital. I realize that the good detail man or medical service representative is busy and has a quota of calls to make five days of the week. His time is personally valuable since the more calls he can make in a day the more business he should theoretically be able to obtain. My plan, I believe, would be of advantage to the detail man since it would allow him to plan his call with a minimum of waiting and to plan other business of the day following this call. It would also allow the pharmacist to plan his day to much better advantage.

I presently interview pharmaceutical representatives on the first and third Tuesdays of the month. Some pharmacists allow only one day a month, others have a day a week, and some do not seem to care when the detail man calls. Under my plan, the detail man will have the privilege of calling the day prior to the first or third Tuesday or calling on that Tuesday to make an appointment for a specific time. The hour of appointment will be honored by me in that I will terminate any other business at that time so that I may discuss the current situation with the particular representative. Detail men who do not care to make appointments will have to take their chances on waiting or on missing me entirely. This plan should provide a service to the conscientious representative since it will guarantee him a prompt interview at a time which is acceptable to the chief pharmacist, thus insuring that the pharmacist be in a receptive mood.

Several years ago when I first assumed charge of the pharmacy, I had no set schedule for representatives to call on me. I was glad to have them come at will and sincerely appreciated their help in checking current stock and in checking through previous orders to help insure adequate stocks of items that had formerly been purchased from them. As time passed, I suddenly realized that I was assuming more and more responsibility about the hospital and that I was spending most of my time talking with the various representatives, and consequently had to carry much of the paper work home to work on at night. Since there were other professional responsibilites to take care of in the evening, such as preparation of lecture material for a course in Hospital Pharmacy Administration for the graduate students, and for a course in Pharmacology for the student nurses, plus editorial responsibilities, I realized that I must plan my day's work better. The present two day a month schedule is the result of meeting this problem.

You might wonder whether you could provide a service by calling me on the Tuesdays between your call days. My immediate answer is no, for I have enough telephone conversations in the course of a day without soliciting any more. There is only one detail man who calls on the inbetween weeks, and he is associated with my wholesaler and thus provides a type of emergency service which is of value to me and which must be of some value to him. It might well be that some persons would prefer this weekly call and thus I would suggest that every pharmacist presents a slightly different situation for the detail man. The main point is to determine the best time to make personal calls and to determine whether the particular pharmacist would prefer telephone calls between the scheduled details. I have the home and business telephone number and address for each of my representatives and I would prefer to call them for emergency orders rather than to have them call me on a routine schedule.

One further point, I have noticed that every so often the district sales manager makes a round of calls with the detail man, this in keeping with accepted supervisory or management trends. Often it is not convenient to bring the "boss" around on one of the two days of the month, since he is in town only for a few days. If such is the case, a telephone call should be made to explain the situation and request some specific time for an interview. I can assure you that I will gladly cooperate and grant an interview at your convenience on such an occasion, so long as these special calls are not increased past the "emergency" state. In most cases, I am flattered that the "boss" wants to come along on your call to my department and am glad to see you both.

GENERAL APPEARANCE AND ATTITUDE

The majority of my detail men--the men who call on me--seem to realize that they must present a professional appearance during their various calls, for they are always well-dressed and present a clean and neat appearance. Some few, and they are associated with the largest and with the cheapest pharmaceutical houses, have forgotten this point of appearance and call on me with clothes awry, collars opened, ties not tied, and in general present an appearance that is not professionally desirable. After one of this type detail man has called on me, I pause to think of the bad influence that he must be the rest of that day when he calls on the physicians, nurses, and on other professional personnel. He is representing the profession of pharmacy to these persons and when he looks like a tramp, he certainly cannot be doing a high-type detailing job for pharmacy or for his company.

Possibly you do not realize it, but I am certain that you men meet and talk with more different physicians on the staff of my hospital in a week than I do and thus you become, professionally, an important cog in the field of professional relations. I insist that my pharmacist staff dress neatly, keep clean, and maintain a professional manner and atmosphere. I do this in an effort to help sell competent pharmaceutical service to the physician. I would remind the few offenders that every time I see them dressed so poorly or in otherwise bad shape, that my opinion of them is lowered and my opinion of the company that they represent is also lowered for letting such a man walk the streets representing that company. Certainly the appearance of the representative to the physician and to the nurse is eventually reflected on pharmacy in general.

The detail man should have a confident attitude but should not be overbearing about the merits of one product as against any other. He should know the products of his company very well, though it is surprising to note the number who know only the really popular items and do not know that the company handles this or that trade-named product.

As for high-pressuring the pharmacist, I would recommend that the detail man know the person with whom he pulls such tactics. Many persons enjoy such tricks of the trade, but I do not. I especially do not enjoy the detail man who in his desire to make a personal contact, exaggerates the personal part of it. Nor do I enjoy being called "doctor" or "doc" by my detail men, that is, not until I am qualified with such a degree. It might be of interest at this point to note that there are nine chief pharmacists in the U. S. who possess the degree of Ph. D. or D. Sc.

NEW DRUGS

A new terminology has recently been introduced into the field of rational drug therapy in modern hospitals. This includes the terms "Therapeutics Committee", "Hospital Formulary" or "Handbook of Drugs", and "Formulary System". The therapeutics Committee is a standing committee of the hospital composed of the chief physician of the medical, surgical, gynecological, urological, obstetrical, pediatric, etc., departments of the hospital These persons form the committee which meets at stated intervals to determine rational therapeutics for use in the hospital. The committee functions to discuss the most modern drug therapy being used by the hospital staff. New drugs can be presented for discussion and if the new drug merits approval of this committee as some new type therapeutic agent, or if it replaces some outmoded type of therapy, then the drug or preparation will be approved and entered into the Hospital Formulary or Handbook of Drugs. Such drugs are said to be official in that hospital and the hospital is said to operate under the Formulary System. By use of such a system, the pharmacy is not required to stock any items other than those approved by the Formulary Committee and entered into the Hospital Formulary.

What does this portend for the detail man? Since my hospital recently went on the Formulary System, I might explain it in terms of what my own detail men found. Let us assume that you have a new product that you would like me to stock, maybe only a bottle of 100 tablets or a box of 100 ampuls of a new item that you claim has definite therapeutic possibilities. Using this new scheme for rationalizing drug therapy, I present the fact that I cannot purchase any new item, unless it is approved by the Therapeutics Committee, or unless your product is a duplication of an existing product at a price as good or better than the last purchase price for that item. I can, however, accept a sample of the product in case there is a call for the item. What I must suggest is that you contact one of your doctor clientele, convince him of the merit of the product and ask him to submit a letter to the Therapeutics Committee requesting consideration of the drug as a new or superior therapeutic agent for use in the hospital. If the Committee considers this request favorably, then the item can be stocked in the pharmacy.

Thus you can see that until such time, samples of the drug to the pharmacist are as valuable as samples to the physician, for they allow him to dispense limited quantities of the new drug to physicians who desire to use this product to obtain data for presentation to the committee to substantiate the request for approval and admission to the Formulary.

SERVICE

Several replies from my colleagues bemoaned the lack of service by the pharmaceutical representative. This was especially prevalent in the smaller communities, despite the fact that the detail man often resided in the community under discussion. In Philadelphia, I find the majority of detail men give excellent cooperation in taking care of emergencies, when there is a shortage of an item at my hospital and they personally borrow the material from another account until replacement stock arrives to me. Of course, I try not to bother these men with trivial items, or with items that are not really emergencies and it seems that they realize that when I want a favor done, it is an emergency and they cooperate to the utmost. If the item is unobtainable locally, then a telephone call is placed or an order is sent special delivery for the item. This latter thought seemed to prove the most discouraging to pharmacists in the smaller communities who felt their detail men did not cooperate in placing certain orders as expeditiously as possible. Such a matter could be easily remedied by the detail man, with a little forethought, and harmony would result.

Only one of my detail men is allowed to check stock in the pharmacy. It seems that he had been inventorying his company's stock in the pharmacy every time he called, long before I took over the department. I have come to realize that he is honest in his suggestions of what items should be ordered and feel that he does not take this opportunity to snoop around the department to see what other items he might talk me into purchasing. We have a good relationship together and I accept his statements as accurate inventories of items on hand. I could probably allow many more detail men to check my stock, but feel that the present system of stock control is sufficiently efficient to meet my needs and allows the placing of orders just about twice a month, with few emergencies arising between the regular order days. I would recommend this system of allowing the detail man to check his company's items to pharmacists who operate "one-man" departments, since they can thus easily assure the fact that sufficient stock will be on hand to last until the next order period. In the same breath, however, I would recommend to the pharmacist adopting such a system to watch out for the "chiseler", for it is human nature to find the occasional detail man whose express purpose is to overstock you.

DETAILING THE PHYSICIAN

Visit the hospital pharmacist before you begin detailing the physicians of the hospital. This subject of detailing the pharmacist first has previously been discussed. I feel certain it is of utmost importance in maintaining a good pharmacist-detail man relationship and that each detail man should make an effort to acquaint the hospital pharmacist with any new product that he is detailing in the hospital or to the hospital staff, BEFORE the detail is made.

Often an exhibit or display can be arranged in the cloak room or some other place where the physician passes. On such an occasion, I would remind the detail man that he should be careful of the "personal" contact with the physician. In my own hospital, the "personal" contact at two such displays has resulted in abolishing the privilege of presenting such material. It seems as though the detail man just about "dragged" the physicians over to the display.

Do not talk in terms of cost price to the pharmacy when discussing a drug with the physician. Either talk in terms of price to the patient, which usually approximates list price, or talk in terms of price to the doctor. One detail man went so far as to quote the physician the pharmacy cost, including the 2% discount deducted if payment is made within the stipulated time. The hospital pharmacy cannot be expected to sell to the physician at cost, for its main purpose is to dispense medications to the patients of the hospital, and it should not compete with retail pharmacists in selling drugs and supplies to the physician of the hospital.

If detailing in the hospital is "restricted", don't try to sneak an interview. The medical staff has probably requested that detailing be restricted and cooperates in maintaining that policy by informing the pharmacist of those detail men who abuse the restricted privileges. With such information, the pharmacist can often swing business from the company indulging in such practices to other companies offering the same price for an identical item.

Finally, don't leave a sample with the physician and tell him that you will leave further supplies with the pharmacist, unless you plan to leave sufficient quantities to allow the physician to obtain a good clinical trial with the new drug. Often the impression is created that the pharmacist has large quantities of the new material, and such is not the case.

FAVORS AND PRESENTS

Many persons are sensitive about the theoretical obligation they assume when they accept an invitation to dinner, a Christmas present, or other favors from a pharmaceutical representative. Other persons expect such favors and presents as a small return for the business they give to this or that representative. Here the detail man must be very careful, must expertly determine just which type of pharmacist he is dealing with, else he will offend the person and possibly lose business on account of

(continued on page 278)

NOTES AND SUGGESTIONS

EDITED BY **GEORGE L. PHILLIPS**

ASSISTANT CHIEF PHARMACIST
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GRADUATED NARCOTIC VIAL

An accurately calibrated serum vial developed especially for the dispensing of narcotics has been produced by the Glasco Products Company. Distribution of the vial is being handled by the Hospital Equipment Corporation, 95 Madison Avenue, New York City, 16. Orders should be sent to this organization and not to Glasco.

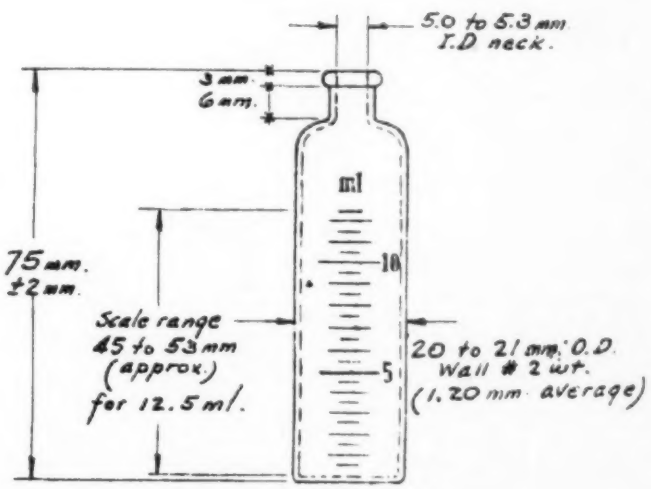
This vial, produced particularly for use in the hospital pharmacy, should do much to overcome the most common criticism of dispensing narcotics in solutions. One of the main arguments against narcotic solutions has been the lack of an accurate method of checking residual amounts in the vials, as contrasted with the accuracy with which hypodermic tablets may be counted. The Glasco vial, which is calibrated by hand, possesses the accuracy of laboratory graduated glassware and provides a ready means of noting the amount of solution remaining in the vial.

The 12.5 cc. vial is designed to provide either twenty-five 0.5 cc. doses, or twelve 1 cc. doses. Thus, graduations at the 0.5 cc. marks are short, while those at the 1 cc. marks are longer. This design provides versatility in use and at the same time allows for essential standardization of manufacture. Thus, while the vial was designed to contain the desired dosage level in 0.5 cc., it may still be conveniently used for 1 cc. doses.

The specifications for the container are summarized as follows:

Standard flint glass, calibrated to contain 12.5 ml. in 0.5 ml. divisions. The 0.5 ml. divisions will be short lines, the 1 ml. division will be longer lines. The 5 ml. division will be longer than the 1 ml. lines. Numbered at 5 ml. and 10 ml. only. No trademark. White filler (fused in).

O. D. 20 to 21 mm.
Wall # 2 Weight (1.20 mm. average)
Body Length 65 mm. approx.
Overall length 75 plus/minus 2 mm.



Rubber stoppers to fit the vial may be of either the pullover sleeve type or of the insulin type. They may be ordered with the vial from the Hospital Equipment Corporation. For those who use aluminum seals, a die for the machine as well as caps and rubber diaphrams may be obtained through regular channels to fit this vial.

Because of the necessity of anticipating the demand and of building up stock of this container, hospital pharmacists are requested to submit their orders at an early date.

BENADRYL COLLYRIA 0.25%

Many requests have been received for benadryl eye drops for the relief of itching and burning "optics". The following formula has been suggested.

Boric Acid Crystals	2.0 Gms.
Sodium Hydroxide Solution N/10	50.0 cc.
*Benadryl Sterivial 10 mg./cc.	25.0 cc.
Freshly Distilled Water, To Make	100.0 cc.

Dissolve the boric acid in the tenth normal sodium hydroxide solution. Then add the benadryl solution from the sterivials and make up to volume with distilled water. Filter until clear through hard paper or a bacterial filter.

* Available from Parke, Davis, and Company, Detroit, Michigan.

FERROUS GLUCONATE SYRUP

A rather palatable syrup of ferrous gluconate may be prepared by using the base that is employed for the Ferrous Sulfate Syrup N. F. VIII.

Ferrous Gluconate	80.0 Gms.
Citric Acid	2.1 Gms.
Peppermint Spirit	2.0 cc.
Sucrose	825.0 Gms.
Distilled Water, To Make	1000.0 cc.

Dissolve the ferrous gluconate, citric acid, and 200 grams of the sucrose in 450 cc. of distilled water, heat gently to effect solution. Cool, add the peppermint spirit and filter until clear. Dissolve the remainder of the sucrose in the clear filtrate and make up to 1000 cc. with distilled water. Mix thoroughly and strain, if necessary, through a pledget of cotton. Each 4 cc. contains 0.32 gram.

Detail Man

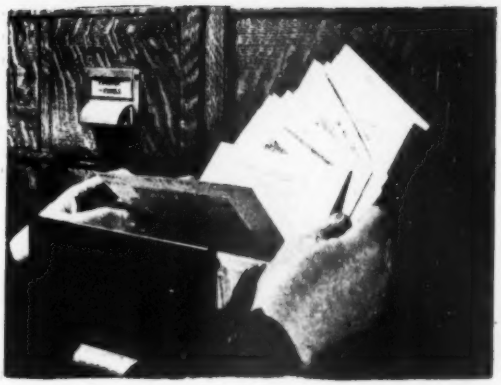
(continued from page 276)

such actions. I know of several pharmacists who anticipate the detail men at the noon hour so that they can have a free meal while discussing the order. I do not know how they find the time to do that for I cannot find time to spend in such pursuits. I know of other pharmacists who would not accept a dinner appointment with a detail man because they feel they would be assuming an obligation to purchase more of certain competitive items from this person.

COOPERATION - SUCCESS

The close cooperation of the medical service representative and the hospital pharmacist is required if the future of each is to be pleasant, profitable, and successful. There has been presented the current thoughts on proper and improper detail man relations. It is hoped that this information will make the medical service representative or detail man of more value to the hospital, to his company, and to pharmacy in general. It is also hoped that this information will prove valuable to hospital pharmacists, especially to those who consider the detail man a liability rather than an asset. In the author's opinion the detail man is a valuable asset if he follows the suggestions in this article. Undoubtedly, if those pharmacists who presently consider him a liability, would organize their detail man clientele into a group in keeping with the text of this treatise, they would find these persons to be a friend and a valuable asset through the cooperation that would ensue.

Therapeutic Trends



New Trends in Medicine and Pharmacy Include PHTHALYL SULFACETIMIDE SODIUM - DIBUTOLINE - BACITRACIN IN OCULAR INFECTIONS - ANTIRHEUMATIC EFFECT OF SODIUM GENTISATE - "C. B. 11": NEW ANALGESIC.

PHTHALYL SULFACETIMIDE SODIUM

Phthalyl sulfacetimide sodium has been found useful in treating ulcerative colitis according to a report of the early clinical studies in The Review of Gastroenterology (August 1948). This drug acts by suppressing bacterial growth and thus removing the factor of secondary infection and affording an opportunity for healing of the ulcer. Since the basic cause of the lesions is not known, control of the secondary bacterial infection proved advantageous. By destroying the bacteria, the ulcers have a chance to heal whereas if they are constantly injured by the bacteria, healing is hampered and there will be a tendency for progression of the ulcerative lesions.

Phthalyl sulfacetimide was found to be non-toxic and clinically safe. Earlier studies using phthalyl sulfanilamide in the management of ulcerative colitis led to the experimental studies using phthalyl sulfacetimide. Since the latter drug had greater bactericidal action than phthalyl sulfanilamide it was thought to be the drug of choice in ulcerative colitis. Studies using sulfathiazole in combination with penicillin in the treatment of ulcers have also been reported.

Phthalyl sulfacetimide sodium (disodium N^1-acetyl-N^4-phthalyl sulfanilamide dihydrate) is a white odorless powder, forming a colorless solution in water, with a pH of 7.4 in a 10 per cent solution. It is non-absorbable and consequently, following the oral route, the blood level in the experimental animal and human is zero. It is absorbed into the gut wall without producing detectable blood levels. Phthalyl sulfacetimide has a marked bactericidal action which is comparable to that of sulfathiazole. and sulfadiazine. When 18 grams were given orally in man, the intestinal flora were reduced from 70 billion to 26,000.

After treatment with phthalyl sulfacetimide, improvement was apparent in 18 out of the 28 cases treated. This consisted of restoration of normal stools, disappearance of pain, reduction in the amount of gas in the intestine, and return of roentgen and sigmoidoscopic findings to normal in 65 per cent of the cases. Tablets of the drug were administered orally in courses of 9 grams daily for five days and repeated until clinical benefit was established. Increased peristaltic activity, encountered in some cases, warranted reduced dosage and the use of paregoric.

DIBUTOLINE

Dibutoline (dibutyl urethane of dimethyl ethyl-β-hydroxy ethyl ammonium sulfate, Merck) has been successfully used in the treatment of spastic disorders of the gastro-intestinal biliary and genito-urinary systems. Clinical studies using dibutoline have been conducted at the Wesley Memorial Hospital in Chicago and the Department of Clinical Science, University of Illinois College of Medicine and reported in The American Journal of the Medical Sciences (August, 1948). This compound has proved exceedingly useful when a prompt, powerful antispasmodic agent is indicated. It has also proved useful to the roentgenologist in combating spasm of the pylorus and antrum and the colon in gastro-intestinal x-ray visualization.

Pharmacologically, dibutoline has been shown to possess both a smooth muscle inhibiting and an anti-acetylcholine or atropine-like action. Clinically, this compound generally has a qualitative action similar to that of atropine, although

certain differences have been observed. Quantitatively, it acts almost immediately and with greater intensity whereas atropine has a less intense but more persistent action.

Dibutoline is not effective orally since as much as 1500 mg. proved ineffective when administered by mouth. Doses of 10 to 20 mg. subcutaneously were employed in the experimental studies. The usual dose for adults was 10 mg. but if no relief was obtained in 20 to 30 minutes, the dose was repeated followed by injection of 10 mg. as needed symptomatically. The duration of action of dibutoline varied from 1 to 24 hours or longer. In some instances a single dose of the drug provides relief for a period which far exceeds the duration of its pharmacological activity, indicating that in these cases once the spasm is relieved it does not recur immediately even though no drug is acting to prevent it.

Favorable results were apparent when dibutoline was employed as the sole therapeutic agent or as an adjuvant in the treatment of smooth muscle spasm associated with 12 types of disorders of the gastrointestinal tract, 2 of the biliary tract and 5 of the genito-urinary system.

BACITRACIN IN OCULAR INFECTIONS

Use of Bacitracin in eye infections appears to be well tolerated according to preliminary reports appearing in the American Journal of Ophthalmology, (September and October issues, 1948). Since it has been shown that in general bacitracin is effective against the same bacteria as penicillin though the organisms are more often susceptible to bacitracin than to penicillin, it appeared that this antibiotic might be applicable to infections of the eye. Furthermore, the fact that there is no evidence that bacteria can inactivate bacitracin as in the case with penicillin, offers another advantage in using bacitracin.

The safety and effectiveness of bacitracin therapy in experimentally produced infections in the rabbit were sufficiently encouraging to use it in human eye infections. It did not penetrate through the normal cornea but did penetrate injured and inflamed corneas. When 100 units of the antibiotic in 0.1 cc. of saline solution were injected into the vitreous to check infections, minimal to moderate degrees of vitreous opacities were observed. These usually disappeared over a course of several weeks. In a later series of infected eyes treated by a similar infection of bacitracin, rarely was a lens opacity observed.

Studies carried out to determine local toxicity showed that bacitracin in saline solution of concentration of 1,000 units per cc. may safely be applied to the human eyeball. The antibiotic was applied topically either as a fine powder or in saline solutions containing 1,000 to 5,000 units per cc. When the concentration was as high as 5,000 units per cc., a definite retardation of the epithelial regeneration with subsequent vascularization and scarring of the tissue resulted.

Using bacitracin therapy in forty-two clinical cases of conjunctivitis and blepharoconjunctivitis, the results were good in acute infections. In 18 chronic cases, improvement followed bacitracin therapy in 6 patients while in 12, the response was less satisfactory or failed completely.

ANTIRHEUMATIC EFFECT OF SODIUM GENTISATE

Sodium gentisate, an oxidation product of sodium salicylate, appears to exert antirheumatic activity, equal to, or greater than, that of salicylate, according to experimental studies reported in Science (September 10, 1948).

Seven patients with rheumatoid arthritis responded to treatment with gentisate fully as well as to treatment with salicylate. Patients were given as much as 10 grams of the drug a day with no untoward effects. One patient who received 8 grams a day developed some epigastric distress which subsided immediately on withdrawal of gentisate. Five acute rheumatic fever patients were given sodium gentisate in doses comparable to those customarily employed for salicylate. Disappearance of pain, swelling, and heat in the joints, a fall in temperature to normal and a fall in sedimentation rate resulted. Four patients with persistently active rheumatic fever--so called "Chronic rheumatic fever"--also responded favorably to gentisate therapy.

The sodium gentisate for experimental use was supplied by Hoffman-La Roche, Inc., Nutley, New Jersey

"C. B. 11" - NEW ANALGESIC

"C. B. 11"(4:4-diphenyl-6-morpho-linoheptan-3-one hydrochloride) is a new analgesic drug which is being used in experimental studies on humans. According to a preliminary report in the British Medical Journal, C. B. 11 is apparently more active than Demerol or Methadone. Clinical studies were conducted at the Royal Infirmary in Edinburgh, England on eighteen patients suffering from various types and severity of pain. Intravenous injection of the drug in doses of 20 mg. produced analgesia in 20 to 30 minutes when the pain was not severe. When pain was more severe, a dose of 30 to 50 mg. was required to relieve pain. Side-effects following administration of C. B. 11 included dizziness which did not last more than five minutes.

pharmacy and public health

FEDERAL COMPULSORY HEALTH INSURANCE

Federal Security Administrator Oscar Ewing, as result of the National Health Assembly, presented a report to the President that brought forth much comment and discussion. The following editorial appeared in the October 1948 issue of Hospitals and is in part reprinted because it provides interesting thought for hospital pharmacists.

Mr. Ewing's report is based on four premises, three of which are now widely accepted. These include the fact that medical care is not available to enough people, and something must be done about it; more hospital facilities must be built and more professional workers trained before the need can be met; and that all of this cannot be accomplished within a reasonable time, unless government accepts more responsibility and contributes more funds.

In regard to the fourth goal as outlined by Mr. Ewing, the editorial reads as follows:

"Only about his fourth premise is there substantial dispute. Here he contends that the goal cannot be reached without the mechanism of federal compulsory health insurance.

"The report calls for an immediate doubling of government expenditures, from two to four billion dollars annually. Among other things, this money would be used to build hospital facilities and to subsidize the training of more professional manpower. Three years would be devoted to these and other tooling-up operations, after which service would be started on a limited but steadily expanding scale.

"Although it removes a little glitter, the report should be viewed against a background of some recent developments. In 1942, the American Hospital Association recognized that their health services would have to be expanded and equitably distributed. In 1943, it adopted a program that would accomplish this.

"Out of that program came the Hill-Burton Act and the Taft National Health Service Bill. Under the former new facilities already are being built with federal government subsidy. Under the latter, still before Congress, government would subsidize all patients who cannot pay their own way. Here is a complete alternative to compulsory health insurance. To succeed, it needs only more time and more money.

"Any solution to so vast a problem will require time. Mr. Ewing's proposal will need much more than he has budgeted for it. Three years of medical school subsidy will not produce a single new doctor, for example, unless training standards are lowered to a third their present level.

"Money? Government is asked to spend 20 billion dollars in 10 years just to set the stage for a compulsory insurance system. With this sum of tax money, plus wholehearted government support, the Association's alternative program would leave little or nothing for compulsory insurance to do, at the end of 10 years.

"Mr. Ewing's report is a valuable contribution in two ways. It not only delineates and dramatizes a national problem. It also narrows the area of debate, and so spotlights the real issue.

"American taxpayers presumably are about ready to invest new billions in better health. With this money they can build new facilities and create a larger pool of professional manpower, but they still will have to make a choice:

"Given the same ready access to comprehensive health service would they as patients be better or worse off in the hands of government controlled doctors and hospitals?

"If future discussion can be centered on this real issue, there will be little misunderstanding of what is at stake. The question is no longer whether government should spend more of its money on better health, but whether the government should take over doctors and hospitals, or merely give them the financial help they need to carry out a new and larger assignment."

VOLUNTARY PREPAID MEDICAL CARE PLANS

The average hospital pharmacist probably belongs to some voluntary prepaid medical care plan. The average prepaid medical plan is basically a newly organized insurance company functioning to pay hospital bills for its subscribers. Several unusual plans have come to light in connection with larger labor unions. One of these plans calls for establishment of a million dollar health center in Manhattan, New York City by the Amalgamated Clothing Workers, CIO, and the New York Clothing Manufacturers Exchange.

Another plan calls for free medical attention to be offered by the Hospital Association of N.Y.C.

and the New York Hotel Trades Council through establishment of a $200,000 medical center to care for 30,000 employees of about 150 New York hotels.

TIME AND MOTION STUDIES

Dr. Carl Walter at the recent A.H.A. Convention presented many facts about the saving of time in the average hospital. He showed pharmacists how they might cooperate in saving time by recommending use of the synthetic detergents, with scrubbing for 90 seconds, as against the use of soap solution, with consequent scrubbing time of ten minutes as a part of pre-operative sterilization procedures. We pharmacists might well investigate this situation and do as at least one hospital pharmacy has done--replace soap solutions with solutions of the new detergent chemicals.

GRADUATED PRESCRIPTION BOTTLES

It is interesting to note that a resolution in regard to the use of graduated prescription bottles was passed by the National Association of Boards of Pharmacy at its recent convention. The resolution reads as follows:

> WHEREAS, the N. A. B. P. recognizes the danger in the use of graduated prescription bottles, because of variance in accuracy, and the fact that Boards of Pharmacy may establish regulations for their discontinuance, therefore
> BE IT RESOLVED that the N.A.B.P. go on record expressing satisfaction with the movement to discontinue the manufacturing of graduated prescription bottles.

Those few hospital pharmacists who might presently be using such containers might well plan to discontinue their use.

HOSPITAL PHARMACY LEGISLATION

Recent resolutions at the annual Convention of the National Association of Boards of Pharmacy follow:

> BE IT RESOLVED, That the N.A.B.P. hereby express the conviction that the compounding, dispensing and distribution of drugs and medicines is a public health service that may be safely entrusted only to persons qualified by special training and experience for this highly exacting professional duty, and be it further
>
> RESOLVED, that the State Pharmacy Acts be revised to make all hospitals, dispensaries and clinics, which distribute drugs and medical supplies, subject to such laws to the same extent that they apply to retail pharmacy . . .

Those hospital pharmacists in states presently not requiring licensure or registration of hospital pharmacies and dispensaries, might well note the above resolution and write to the state board members referring to the resolution and requesting action that will make it mandatory for hospitals to have either the full-time services of a pharmacist (and a licensed pharmacy), or the part-time services of a pharmacist, or pharmaceutical service from a nearby retail pharmacy. This is a matter that could be pushed ahead by the various hospital pharmacist organizations, or else can be stimulated by any forward-looking hospital pharmacist. It is a matter of vital concern to every member of the A.S.H.P.

PROPRIETARY DRUGS

Another resolution passed at the Convention of the N.A.B.P. is as follows:

> WHEREAS, The various state pharmaceutical associations in their attempts to strengthen and perfect laws regulating the control and sale of dangerous drugs, have found to their dismay that representatives of the Proprietary Association have taken steps to prevent passage of these laws, or to weaken them by amendments; be it
> RESOLVED, That the N.A.B.P. condemn such practice on the part of the Proprietary Association.

Though this matter has little direct concern to hospital pharmacists, since very few of us function on the commission basis as regards payment of salary, we are still pharmacists and interested in the forward movement of the profession as a whole. Recent efforts of the Proprietary Association seem to be detrimental from the professional viewpoint of pharmacists, in fact it might seem as though this group would desire to have the dangerous drugs, and the like, available to the lay public on over-the-counter sale in tobacco shops, grocery stores, from vending machines, etc. Hospital pharmacy should join forces with those persons and groups opposing such detrimental activities of the Proprietary Association, in order that the profession of pharmacy and the general lay public might be spared the consequences of such unrestricted sale or availability of drugs.

CURRENT LITERATURE

AMERICAN PROFESSIONAL PHARMACIST

September, 1948 - "Hospital Pharmacy in Switzerland" by Kurt Steiger. Describes the rapid advances in Hospital Pharmacy in Switzerland as evidenced by the construction of the Canton Pharmacy in Zurich. Explains the duties of the pharmacist in charge as an inspector of public and private pharmacies.

page 824

"Hospital Pharmacy News Bulletins." Presents examples of typical news and technical bulletins issued by hospital pharmacies for the assistance of the medical staff.

page 830

October, 1948 - "Fill 'er up." Presents a questionnaire to study the refilling of prescriptions in hospital pharmacies and clinics. The intention is to urge the adoption of a rigid policy in regard to refilling prescriptions.

page 926

"Ideas at Work." Illustrates and describes numerous pieces of equipment presented at the "Gadget Show" at the recent Institute in Princeton, New Jersey.

page 928

November, 1948 - "Control of Pre-Packaged Stock" by Edith G. Bactowsky, Pharmacy Intern at Jefferson Medical College Hospital, Philadelphia, Pa. Describes the complete procedure for pre-packaging stock for inpatient and outpatient use. Stock Control records are illustrated and a control system of labeling is recommended.

page 1030

"The Question Box." A new feature intended to obtain statistical information dealing with specialized practices in hospitals.

page 1034

HOSPITAL MANGEMENT

October, 1948 - "New Scientific-Medical Trends and Developments in Pharmacy" by Frederick F. Yonkman, M. D. - Tells of some of the important advances made in this field and envisions future developments.

page 84

"New Pharmaceuticals." Several new biologicals and pharmaceuticals are described.

page 92

November, 1948 - "The Contributions of Pharmacy to Science and Health Objectives" by Austin Smith, M. D. Explains the numerous complex problems of the several medical professions in arriving at a truly scientific and safe health program.

page 86

MODERN HOSPITAL

October, 1948 - "Quinidine." A precise presentation of the pharmacological effects on the heart, the absorption and excretion; as also, the therapeutic uses of the drug.

page 98

November, 1948 - "Drug Laws Need Good Teeth" by L. T. Lyon. The method of control of the use of narcotics and the records kept is illustrated. Also detailed is the Michigan Dangerous Drug Act and the requirements in the keeping of barbiturate records in the hospital are presented.

page 100

"Myanesin." Describes the history, chemistry, mode of action and pharmacology of this comparatively new drug.

page 104

SOUTHERN HOSPITALS

October, 1948 - "The Pharmacy - No Longer a Retreat" by Joe Vance. From a paper presented before the Southeastern Hospital Conference. The development of the hospital pharmacy as a distinct service unit and its progressive professional advancement is well described.

page 59

THE VETERANS ADMINISTRATION PHARMACIST

Edited by Eddie Wolfe, Chief Pharmacist,
Mt. Alto Veterans Hospital, Washington, D. C.

PHARMACIST'S ROLE AS CONSULTANT TO PHYSICIAN

Lloyd Dixon, VA Center, Kecoughtan, Va.

To be able to properly fulfill the role of a consultant, a good library of up-to-date reference books as well as the latest circulars, leaflets, and magazines should be kept in the pharmacy for ready reference of both the pharmacists and the physicians.

All the leaflets and circulars should be kept alphabetically. The magazines indexed by months in a drawer file and a card index listing each topic of value for reference showing month, year, volume number if any, and page number of desired magazine in which the article can be found. The fact that the pharmacy can be depended upon as a source of the most up-to-date information on all drugs of interest, should be impressed upon the physicians and nurses at every opportunity.

Early in April, I instituted a new service to the physicians which helps to associate the pharmacy with new drug information. As soon as each new drug is approved by the Therapeutics Committee and stocked in the pharmacy, I work up a one-page bulletin to the physicians from the pharmacy. In this bulletin I try to select pertinent information, condensed, so the physician can have this information available without having to read through a mass of unnecessary material. This helps him to conserve his time as well as making him aware of the help the pharmacy can be to him in addition to filling his prescriptions. More than one of the physicians have expressed their appreciation of this bulletin and some told me they were keeping all of these bulletins together in a permanent file. These expressions have all come to me unsolicited on my part and indicate to me that the time and effort used in making up these bulletins is well spent. Not only in the immediate results but in future possibilities toward a higher level of understanding and cooperation between the physician and his rightful co-worker and consultant, the pharmacist.

Informally, as time permits, I make visitations to the different clinics, postmortems, surgery during operations, etc., to observe and possibly make comments or ask questions to show my interest in the work of the physician first hand. After all, why should the pharmacist always expect the physician to come to the pharmacy if the pharmacist does not visit the physician and observe him at his work? This makes the physician feel that the pharmacist is really interested in his, the physician's work. During the conversations the physician should be able to learn that the language of the physician is not an entirely new or strange language to the pharmacist, but that they both can converse on a common level of language on a subject which is of interest to both. Some of the physicians, I find, are very much surprised upon learning of the educational requirements of a pharmacist. And some pharmacists, I am sure, during the course of receiving their pharmacy education, do not appreciate the opportunity given them in such a course, which makes them eligible to converse on a level with the medical profession, thus laying a foundation for a closer interrelationship between the physician and his consultant, the pharmacist.

MAINTENANCE OF PROPER STOCK IN PHARMACY

Roy Kelsey, VA Hospital, Huntington, W. Va.

The matter of stock control in a hospital pharmacy has many angles. If one just had staples to deal with, it would be a very simple affair. By staples is meant such items as Milk of Magnesia, F. E. Cascara, Mineral Oil, etc. Use of these changes but little from month to month and a monthly quota can soon be established. This quota rises and falls in direct ratio to the patient load.

The non-staples are more difficult to control--with some it is impossible to set a quota. These preparations should be ordered in small lots until a quota is determined. There are quite a few factors that should be considered in the stock of non-staples. Let us consider them in more detail. Some of these factors apply also to staples.

a. Stability of patient load.

Sudden declines or advances in the patient load will naturally upset quotas temporarily.

b. Physician turnover.

It is very important to keep posted on physician resignations. Almost every doctor has one or two medicaments that he alone favors. As soon as it is learned a physician is leaving a cautious attitude should be adopted as regards stock of such favorites. If a surplus remains the new doctor should be contacted with the view of getting his cooperation in disposing of the surplus. At

the same time the replacement doctor could be queried as to his preferences in the drug line.

c. Prescribing characteristics of physicians.

Every hospital has its quota of prolific and negligible prescribers. The prolific ones are the problem as stocks will have to be built up to meet their needs and lowered on their departure.

d. Mercurial Diuretics; Gold Therapy for Arthritics, etc.

It seems hardly necessary to stock all brands. It is a good idea for The Committee on Therapeutic Agents to choose a primary brand for general use and keep a modest stock of another leading make so that in case of reactions to the primary, the other will be at hand.

e. New Items (V. A. accepted) but still in the transitional stage.

The writer has Penicillin in Oil and Wax in mind. This item was hardly well established when Procaine Penicillin in Oil was introduced to be followed in a short time by the latter in aqueous suspension. The pharmacist should realize such a condition and be cautious in ordering so there will be no surplus of the old when the new comes in.

f. Seasonal Items.

The pharmacist should take cognizance of the seasonal nature of some items and have ample stock on hand to meet the peak demand. For instance, cough syrups and APC tablets in winter; bismuth salts and salt tablets in the summer; adrenalin, ephedrine, pyribenzamine, etc. for hay fever season.

g. Future Dated Items-- Biologicals, Insulin, Liver Extract, etc.

Biologicals are not very difficult to control. They are now on decentralized contract. One should bear in mind that most of them have a two-year future date at least and are exchangeable. Insulin must be watched as most strengths are now depot items.

h. Issue-book X's.

Each month when issue-book is returned, after order has been filled all X's should be noted and checked against stock cards for verification. Sometimes the card of some items will show a balance. Usually a check will produce the item in the store-room misplaced due to the fact that the item has more than one name. For instance, when salyrgan is received, new help may place it in the S bin whereas it should be stored in the M bin under the official supply catalog title of Mersalyl and Theophyllin Injection. This happens with other items also and if not watched could easily cause a surplus.

i. Cooperation with Supply Department.

This is a mutual affair. Each department has something to offer the other. The pharmacist can help Supply establish store-room quotas, aid in preparing the monthly depot orders; in fact, all types of drug orders and assist in clarifying pharmaceutical nomenclatures. Supply can help by giving prompt service and by seeing to it that the pharmacist gets all notices of stock changes, price lists, etc.

MAINTAINENCE OF PROPER "FLOOR STOCK" ON WARDS AND IN TREATMENT ROOMS.

Procedures and Equipment Instituted in the Pharmacy At The VA Hospital, Washington, D. C.

Eddie Wolfe, Chief Pharmacist

Ward drug cabinets are all uniform in appearance. All tablets and capsules are placed in eight ounce wide-mouth amber powder jars. Liquids that are to remain in the ward drug cabinets are placed in 12-ounce amber bottles. Any liquids that are to be used in larger amounts are placed in 32-ounce amber bottles and are usually stored in a large drug cabinet on the ward.

The ward drug baskets are picked up from the ward by an attendant with the pharmacy drug cart each morning. These baskets are in the pharmacy by 8:15 a.m. After the baskets are filled, they are delivered to the wards by the pharmacy helper.

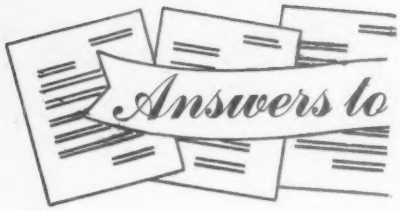
Stock tablets and capsules are arranged alphabetically on shelves in the pharmacy. These items are placed in 16-ounce wide-mouth amber powder jars. All stock liquids are placed in 32-ounce amber bottles. These bottles are not arranged on the shelves in the usual manner of the flat side out, but are arranged so the label is on the edge facing out. This allows for more shelf space. Stock ointments are placed in 16-ounce jars.

All amber stock bottles that are to be kept in the pharmacy are labeled by hand with a drawing pen and waterproof ink. Blank labels were purchased from a commerical firm specializing in distinctive labels. All stock bottles and jars contain the original label on one side and the hand printed label on the show side. All labels are coated with a protective shellac.

Drug baskets are made of fiber material and are of the bread-basket type with a handle. This type is preferable to the wire basket type in that if a bottle breaks, the liquid will not leak out of the basket. An enclosed type basket also will allow less breakage due to hard knocks.

Hypodermic narcotic tablets are dispensed to the wards in two-dram clear glass vials. Oral narcotic tablets are dispensed to the wards in four-dram clear glass vials. All narcotic vials are sealed with a plastic Celon covering before leaving the pharmacy.

NOTE: All amber bottles and jars were purchased from the Armstrong Company.



QUERIES

EDITED BY EVLYN GRAY SCOTT, CHIEF PHARMACIST,
ST. LUKE'S HOSPITAL, CLEVELAND

RED BLOOD CELL OINTMENT WITH PENICILLIN

M. F. of California requests a formula for red blood cell ointment with penicillin.

Suspended Red Blood Cells	450.00 Grams
Water Absorbent Base	900.00 Grams
Methylparaben	0.88 Grams
Propylparaben	0.47 Grams

Penicillin Solution qs ad about 1000 Units per Gram to be added at time of dispensing.

A five pound ointment jar is used for a container so the ingredients are weighed directly into it A large spatula or paddle may be used to incorporate the ingredients. Sterilized equipment helps to prolong the length of time the ointment will keep in good condition. Red blood cells are obtainable from the hospital blood banks. If the plasma has not been removed it should be poured off so that the red cells will be more concentrated. The U. S. P. hydrophylic ointment, by itself, or mixed with hydrophylic petrolatum, makes a suitable water absorbent base as well as do the many others that are on the market under various trade names. The parabens are added as a preservative and may be obtained from Merck and Company as well as other sources.

Red blood cell ointment with penicillin and chlorophyll ointment may be used interchangeably in most cases.

CHLOROPHYLL PREPARATIONS

A. B. of Massachusetts requests formulas for chlorophyll preparations. The following are used at Jefferson Medical College Hospital and are prepared in the hospital pharmacy.

Chlorophyll Ointment

Chlorophyll	227.0 cc.
Hydrophylic Ointment, U. S. P.	1135.0 Gram.
Hydrophylic Petrolatum, U. S. P.	1135.0 Gram.
Benzalkonium Chloride Soln. (12.8%)	1.0 cc.

Chlorophyll Solution

Chlorophyll	87.5 cc.
Alcohol	1750.0 cc.
Formaldehyde Solution	437.5 cc.
Perfume	7.0 cc.
Distilled Water, To Make	4000.0 cc.

Chlorophyll in solution may be obtained from Magnus, Mabee, and Reynard, Inc., New York, N. Y. There are several types for pharmaceutical use and the one used in these formulas is Chlorophyll Water Soluble Grade G. W. C. quoted at $4.90 a pound if purchased in one ounce lots.

SOURCE OF AMARANTH POWDER

E. K. of Texas asks for a source of amaranth powder for use in preparing elixir of phenobarbital.

Amaranth powder, U. S. P. (F. D. and C. Red # 2) may be purchased from Fischer Scientific Co., 709-719 Forbes St., Pittsburgh, Pa., for about $0.75 an ounce.

EMERGENCY DRUGS FOR PHYSICIANS HAND BAG

L. M. of Ohio would like the reference for a published list of drugs a physician should carry in his hand bag for emergency use.

Such a list appears in the Journal of the American Pharmaceutical Association, Practical Pharmacy Edition, September, 1945, page 230. The list was obtained from the "Therapeutic Reports of the Cornell Medical School Conferences on Therapy", which are edited by Dr. Harry Gold.

NEWS ITEMS

FLACK ELECTED A.S.H.P. PRESIDENT

Officers of the American Society of Hospital Pharmacists for the 1949-1950 term have been announced. Mr. Herbert L. Flack, chief pharmacist at Jefferson Medical College Hospital in Philadelphia has been elected president. Mr. Flack has been active in the A.S.H.P. for a number of years, having served as an editor of THE BULLETIN and on the institute faculty. He is also a member of the faculty of the Philadelphia College of Pharmacy and Science.

Other officers-elect are Vice-President W. Paul Briggs of the U. S. Navy, Washington, D. C. and Treasurer Sister Mary Junilla, Queen of Angels Hospital in Los Angeles, California.

According to an amendment to the Society's By-Laws which was passed at the 1948 convention, the secretary is to be nominated by the executive committee and elected annually by the A.S.H.P. House of Delegates which includes delegates of the affiliated chapters and the executive committee.

The officers elected will be installed at the annual convention to be held in Jacksonville, Florida during the week of April 24th, 1949.

The membership also voted to amend the Society's Constitution by making a provision for organizing local affiliated chapters. Accordingly, a local or regional group of hospital pharmacists numbering ten or more active members of the Society may become an affiliated chapter of the American Society of Hospital Pharmacists by conforming to the rules governing such chapters as are established or may be established by the Executive Committee of the Society.

A. PH. A. ANNOUNCES ELECTION RESULTS

Announcement of the results of the election for officers of the American Pharmaceutical Association has been made. New officers to be installed at the annual convention in Jacksonville next April include: Glenn L. Jenkins, Dean of Purdue University School of Pharmacy, president; Harold C. Kinner, secretary of the District of Columbia Board of Pharmacy, first vice-president; and Leib L. Riggs, retail pharmacist of Portland, Oregon, second vice-president. Members-elect of the council for three year terms are: George D. Beal, research director of Pittsburgh, Pennsylvania; John B. Heinz, retail pharmacist of Salt Lake City, Utah; and Roy L. Sanford, practicing pharmacist of Enid, Oklahoma.

DR. PURDUM SPEAKS

Dr. W. Arthur Purdum, chief pharmacist at Johns Hopkins Hospital, and president of the A. S. H. P. was one of the speakers at the formal opening of the Kelly model professional pharmacy at Duquesne University in Pittsburgh on November 1. The Kelly pharmacy will serve as a teaching laboratory in the school of pharmacy. It was given to the University under a grant made by the George A. Kelly Company, wholesale druggists of Pittsburgh.

Other speakers at the ceremonies included Dr. Justin L. Powers, chairman of the National Formulary Committee and Dr. Ernest Little, president of the A. Ph. A., who spoke at the evening dinner.

ZUGICH SPEAKS AT INSTITUTE

Mr. John Zugich, chief pharmacist at the Grace-New Haven Community Hospital, was a speaker at the Institute for Purchasing Agents held in Boston during the week of November 1. "Purchasing of Pharmaceuticals" was the title of the paper presented by Mr. Zugich in which he discussed the value of cooperation between the pharmacist and the purchasing agent. Common errors in an improperly organized purchasing policy were cited along with typical examples on which either the pharmacist or purchasing agent may be at fault and how the difficulty might be overcome.

FULL CREDIT FOR EXPERIENCE IN HOSPITAL PHARMACY

An opinion has recently been presented by the Commonwealth of Pennsylvania regarding the acceptance of practical experience required for licensure, and obtained in a hospital pharmacy. Accordingly, the State Board of Pharmacy will now allow full credit for experience acquired in the drug dispensary (pharmacy) of a public hospital, IF the dispensary (pharmacy) is a duly registered pharmacy.

POSITIONS in hospital pharmacy

OHIO . . . Pharmacist preferably with M. S. or Ph. D. to teach in recognized School and to supervise manufacture of tablets, ointments, and general pharmaceuticals to be used in University Hospitals. Duties limited permitting research. Young, energetic, congenial staff. Superior under-graduate student body. Enrollments limited. Respectable salary and rank, dependent upon qualifications. For further information, address the Dean, School of Pharmacy, Western Reserve University, Cleveland 6, Ohio.

U. S. PUBLIC HEALTH SERVICE PHARMACISTS ATTEND INSTITUTE

Hospital Pharmacists in the U. S. Public Health Service meet at the Institute which was held in Princeton in June. Seated from left to right are: Senior Assistant Pharmacist (R) Margaret Gary, Chief Pharmacist, U. S. Marine Hospital, Norfolk, Virginia; Senior Assistant Pharmacist (R) William Hanna, Chief Pharmacist, U. S. Marine Hospital, Baltimore, Maryland; Senior Assistant Pharmacist Officer Donald Wenschhof, Foreign Quarantine Division, Washington, D. C.; Senior Pharmacist George F. Archambault, Chief, Pharmacy Section, Hospital Division, Headquarters' office, Washington, D. C.; Senior Assistant Pharmacist (R) William Dudley, U. S. Marine Hospital, Boston, Massachusetts; Senior Assistant Pharmacist Robarts Proper, Chief Pharmacist, U. S. Marine Hospital, Staten Island, New York, and Senior Assitsant Pharmacist Joseph P. Crisalli, Chief Pharmacist, U. S. Public Health Service Medical Relief Station, New York City.

ORGANIZATION NEWS

THE CONNECTICUT SOCIETY OF HOSPITAL PHARMACISTS was formally organized at a meeting held at New Haven Hospital on October 23, 1948. Nineteen hospitals in the state were represented. Officers elected are President Frank Steele, Greenwich Hospital, Greenwich; Vice-President Shirley Bennett, Grace-New Haven Hospital, New Haven; Secretary L. W. Burleson, Connecticut State Hospital, Middletown; and Treasurer Sister Maria Lucia, Hospital of St. Raphael, New Haven. Committees were appointed and plans were made for affiliation with the national society.

Following the business session, a general round table discussion on specific problems was held ending in a tour of the New Haven hospital pharmacy and dispensary.

THE PHILADELPHIA HOSPITAL PHARMACISTS ASSOCIATION had Mr. Bruce Taylor, Administrative Assistant of the Associated Hospital Service of Philadelphia as their speaker at the October Meeting held at University of Pennsylvania Hospital. Mr. Taylor discussed the inception of the Blue Cross, the number of subscribers and the list of drugs for which the Blue Cross will reimburse the hospital pharmacist.

At the November meeting, Mr. Donald A. Clarke, Apothecary-in-Chief at the New York Hospital spoke on "Standardization and Control of Floor Stock." He presented justification for establishing floor drug budgets, wherein patient-day costs are determined for every nursing unit. These statistics can be used to analyze the operation of every nursing unit and if costs rise, the head nurse can be contacted to check reasons for increased cost of drugs which may be due to theft, hoarding or carelessness. Mr. Clarke presented a patient day cost of 11.9 cents per day (not including penicillin) for an inclusive rate teaching hospital. He also pointed out that his hospital is now beginning a system of only one delivery per floor per week, instead of the daily delivery system which the average pharmacy now has. Much interest was shown in this new plan.

THE HOSPITAL PHARMACISTS ASSOCIATION OF GREATER ST LOUIS held their September meeting at the Missouri Athletic Club as guests of E. R. Squibb & Sons. Included on the program was a discussion of the use and present status of the drug Myanesin. Mr. Francis Rudi, chief pharmacist at the Missouri Pacific Hospital reported on the San Francisco convention mentioning highlights of both the A. Ph. A. and the A. S.-H. P. meetings.

At the October meeting the Abbott Laboratories was host to the St. Louis Hospital Pharmacists with Mr. Charles F. Lanwermeyer as guest speaker. He discussed new preparations now available followed by an open forum at which time those present had an opportunity to ask questions. Mr. Armand J. Dellande also spoke on public relations in the hospital pharmacy.

The St. Louis group has pledged $100.00 to the St. Louis College of Pharmacy Library Fund.

THE GREATER NEW YORK CHAPTER OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS met at St. Peter's Hospital in Brooklyn on the afternoon of September 15th. Sister Rose Dominici reported on the sectional pharmacy meeting which was held at the thirty-third annual convention of the Catholic Hospital Association meeting in Cleveland in June. Several members who attended the Institute at Princeton presented highlights of the program discussing each subject.

New officers of the Greater New York Chapter elected at this meeting include: Sister M. Donatus, president; Sister Maria Joseph, vice-president; Sister M. Nicodema, treasurer; Sister Cecilia Mary, corresponding secretary; and Sister M. Angeline, recording secretary.

Following the business meeting, the sisters spent some time in Sister Editha's pharmacy department at St. Peter's Hospital.

THE AKRON AREA SOCIETY OF HOSPITAL PHARAMCISTS saw a film on "Regional Anesthe-

sia" at the October meeting held at St. Elizabeth Hospital in Youngstown, Ohio. Following the business meeting, the group had an opportunity to inspect the pharmacy at St. Elizabeth Hospital where Sister Jeanne Marie is chief pharmacist.

Meeting at Mercy Hospital in Canton on November 9th the Akron Area Society saw a film on "Vitamin B Deficiencies" which was presented by the Eli Lilly representative. It was decided at this meeting to ask the Cleveland Society of Hospital Pharmacists to join the Akron Area Society for the April meeting when Mr. George Seyforth of the Medical Arts Pharmacy is scheduled to speak on "Professional Retail Pharmacy."

THE MASSACHUSETTS SOCIETY OF HOSPITAL PHARMACISTS met on the evening of November 17th at the New England Baptist Hospital with Miss Edith Hill and Miss Judith Hall, pharmacists, acting as hostesses. After a visit to the pharmacy department where refreshments were served, the guest speaker for the evening, Dr. Frances Smith, associate of Dr. Sarah Jordan of the Lahey Clinic in Boston spoke on "The Present Status of Peptic Ulcer."

THE MICHIGAN SOCIETY OF HOSPITAL PHARMACISTS held its October meeting on the 28th of October at the Holy Cross Hospital in Detroit. Following a dinner the meeting was called to order by Vice-President, Miss Belle Moskowitz. A committee was appointed for selecting a candidate to the Michigan State Board of Pharmacy. Members chosen are Lou Lester, J. C. Campbell and Al Lorch.

Mr. Sereck Fox, Technical Adviser to Gelatin Products and Scherer Corporation was the speaker. His discussion on the "Technical Importance of Language" was summed up in these few words: "Let us say what we mean and mean what we say."

THE CLEVELAND SOCIETY OF HOSPITAL PHARMACISTS met on October 8th in a joint meeting with the Northern Ohio Branch of the A.-Ph. A. at the Cleveland Health Museum. The Director of Food and Drug Control of the City of Cleveland Department of Health, Mr. E. B. Buchanan, was the speaker. He discussed the activities of his department and their attempt to protect the public against the sale of fake or dangerous drugs and devises.

THE WISCONSIN SOCIETY OF HOSPITAL PHARMACISTS held the first meeting of the season at 4 p.m. September 24th at the Mt. Sinai Hospital with Mr. Wm. Benka presiding. Dr. Bert Schoenkerman discussed a number of the antihistaminic drugs and the different types of allergies and their relationship to heredity.

On October 18th and 19th, twenty-two members enjoyed a trip to Indianapolis, as guests of the Eli Lilly Pharmaceutical Laboratories. The group toured the research laboratories of the Eli Lilly Plant.

Wisconsin Society of Hospital Pharmacists at Eli Lilly and Company

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THE SOUTHEASTERN HOSPITAL PHARMACISTS ASSOCIATION convened for their semi-annual meeting, October 30th and 31st at the McAllister Hotel in Miami, Florida. Hospital pharmacists from practically every Southeastern state were present for this two-day meeting. In charge of the program were Mrs. Joyce Gaines, president of the Southeastern Association, Mr. Joe Vance, and Mr. Albert P. Lauve. A tour of five Miami hospitals offered those present an opportunity to inspect hospital pharmacies.

Included on the program on Saturday was a paper by Mrs. Lillian Price, chief pharmacist at Emory University Hospital in Atlanta who presented the subject "Service to the Patient." Mr. Hy Africk, chief pharmacist at Oak Ridge Hospital, Oak Ridge, Tennessee discussed "The Patient and the Hospital." On the following day Commander W. Paul Briggs of the Medical Service Corps, U. S. Navy spoke on "Pharmacy in the U. S. Navy." He outlined the Navy's program for pharmacy and urged the group to lend its support to this program and pointed out that opportunities

for pharmacists to serve in all medical administrative branches of the Naval service are awaiting those pharmacists who wish to serve with the Navy and the Naval Reserve.

Other papers presented were "The Hospital Pharmacist's Role in Teaching" given by Mr. Wm. O'Brien, chief pharmacist, Touro Infirmary, New Orleans, La., and "Properly Registering a Hospital Pharmacy" by Mrs. Anna D. Thiel, Jackson Memorial Hospital in Miami. Guest speakers at the dinner meeting on Saturday evening included: Dr. John Elliott, Director, Dade County Blood Bank, Miami, Florida; and Preston B. Bird, County Commissioner and Chairman of the Hospital Committee, Dade County, Florida.

THE ILLINOIS CHAPTER OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS held its October meeting at the Chicago Hospital Council with Dr. J. S. Wells, Associate Professor of Pharmacology at Northwestern University, as the principal speaker. He spoke on "The Mechanism of Pyrogenic Reaction" followed by a discussion in which those present participated.

Miss Rita Streit, pharmacist at the Illinois Masonic Hospital, gave a report on the national convention held in San Francisco in August. During the business session a committee was appointed for the purpose of establishing a series of By-Laws and directive plans for the future functions of the Illinois chapter.

THE DISTRICT OF COLUMBIA CHAPTER OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS met in conjunction with the City of Washington Branch of the American Pharmaceutical Association on October 22nd at George Washington University School of Pharmacy. "Present Day Measures for the Control of Communicable Diseases" was the subject presented by Dr. Carl C. Dauer, Epidemiologist at the District of Columbia Health Department and Assistant Clinical Professor of Medicine at George Washington University.

Prior to the joint meeting, the hospital pharmacists held a business session. Mr. D. E. Wenschhof of the U. S. Public Health Service Dispensary in Washington was elected vice-president to fill out the unexpired term of the former vice-president who is no longer in Washington. Mr. George Archambault, as chairman of the committee on the constitution and by-laws, presented a constitution and by-laws which was drawn up by the committee for approval by the membership. Discussion and final approval will take place at the December meeting.

THE NORTHERN CALIFORNIA SOCIETY OF HOSPITAL PHARMACISTS held their November meeting at the Langley Porter Clinic in San Francisco. Dr. Alexander Simon, Assistant Director of the Clinic and Professor of Psychiatry at the University of California spoke on "Drugs Used in Psychiatric Treatments."

THE LOUISIANA SOCIETY OF PHARMACISTS had Dr. Stanley Cohen as their main speaker at a recent meeting held at Mercy Hospital in New Orleans. Dr. Cohen spoke on anti-histaminic drugs and their use in relieving allergies. Another speaker was Mr. Frank Thompson, hospital representative of the Parke, Davis and Company.

THE ASSOCIATION OF HOSPITAL PHARMACISTS OF THE MIDWEST met on the afternoon of October 9th at the University of Nebraska with Miss Phyllis Platz as hostess. Dean J. B. Burt of the University of Nebraska College of Pharmacy spoke on "The Existing Laws of Nebraska Governing Barbiturates." This was followed by a discussion on the recent institute held at Princeton and Dean Burt gave some highlights of the Convention held at San Francisco.

The Midwest Association is grieved to announce the death of Mr. E. O. Haschenburger who was the pharmacist at Lincoln General Hospital. Mr. Haschenburger died on October 11th after a short illness.

THE SOUTHERN CALIFORNIA CHAPTER OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS held their November meeting at Queen of Angels Hospital in Los Angeles. The following officers were elected for the coming year: President Walter Hitzelberger; Vice-President Zelba Yant; Secretary Alice Appel; and Treasurer Richard Slanker.

Mr. Towne announced that a course in hospital pharmacy is now being offered at the University of Southern California College of Pharmacy and that the course will closely follow the outline which he presented at the recent convention in San Francisco.

Included on the program was a paper on Internships in Hospital Pharmacy by Alice Appel.

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beginning for the convenience
of the microfilm user.